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SOVIET STATE GRAIN FARMS . . .

By W. Ladejinsky*

The state grain farm is one form of Soviet reorganization of the country's agricultural system along collectivistic lines. These farms were expected to supply the Soviet Government with certain quantities of grain at reasonable prices, and in doing so to illustrate the advantages of large-scale agriculture versus small-scale, individual-peasant farming. Because of poor land allotted to them in many cases, inefficient management, lack of skilled workers, and the underlying theoretical concepts that could not stand the test of practical application, the state grain farms did not succeed in coping with the tasks assigned them.

The Russian Revolution of October 1917 wrought a radical change in the country's agricultural relationships. The application of the slogan, "All land to the peasants," resulted in the expropriation of the private estates belonging to the landlords, the crown, and the church. The distribution of this land among the peasants caused the number of farms to increase from 15 million before the revolution to 22 million in 1923 and to more than 25 million in 1928. The system of large-scale agriculture was done away with, and after 1917 Russia became a country of small-scale farming.

This agricultural system could not fit permanently into the new state the Soviet Government wished to fashion. It was felt that the solution of the agrarian problem did not lie in small-scale farm ownership, for it might easily foster purely individualistic, proprietary interests inimical to those of the State. But aside from the ideological aspect of the problem, there was also the fact that in Russia peasant farming had been technically inferior to that of the large private estate. The peasant farms produced 11 bushels of wheat and 4.5 bushels of barley compared with 17 bushels of wheat and 9 bushels of barley per acre formerly produced on large estates. The Soviet Government insisted, therefore, that peasant agriculture was not sufficiently productive to insure a progressive development of the country's agricultural economy.

From the governmental point of view, the real solution of the agrarian problem rested in the elimination of the millions of small producers through collective farming on a large scale. One of the forms into which the policy leading to collectivization evolved was the peasant collective farm and the other was the state farm. The latter type of farm is a large agricultural enterprise worked by hired labor and

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owned, financed, organized, and managed by the Government.[1/] The main function of a state farm as defined by the land decree of February 14, 1919, is to bring about "(a) the maximum increase of output through greater agricultural productivity and the extension of the sown area; (b) the creation of conditions for a complete transition to a collectivistic system of agriculture; (c) the organization and development of cultural agronomic centers." [2/]

The Soviet state farms fall into several groups, chief among which are the grain, livestock, and cotton farms. This study deals with the state grain farms, which were expected to help solve the country's grain problem and to lead the way to large-scale agriculture in Soviet Russia.

ORIGIN AND DEVELOPMENT

The history of the development of the state farms falls into two periods. In the first, from 1918 to 1928, the farms were relatively small in size, and practically all were established on land that had been part of private estates. The second period began in 1928, when the Soviet Government inaugurated a program creating huge new grain farms, known as "grain factories." This article is concerned primarily with the latter period.

During the years 1918-1921, there were established a total of 5,629 state farms with an area of 8,886,000 acres. The size of the farms varied from a minimum of 250 to a maximum of 5,000 acres. The number of farms decreased after 1921, when the Government insisted that they must be self-sustaining. They could adjust themselves to this demand "either by drastic curtailment of the general scope of their work through liquidation of the weak state farms, thereby strengthening the better-organized units, or by means of a drastic cut in overhead expenses." [3/] The first alternative having been chosen, the net result was that by 1926 the number of state farms had decreased to 3,347 and the area to 5,743,680 acres.

The foundation upon which the state farms were built throws light on the cause of their decline. Even before the Communists seized power in Russia, they urged that every Peasant Committee should organize, out of the various estates confiscated by it, a large model state farm. In reality, however, it was impossible to turn all the private estates into state farms because the peasants had succeeded in dividing among themselves most of the land prior to the inauguration of the state-farm movement on a large scale. Data for 1920 show that the number of state farms, their area, and their livestock in relation to the former private estates in the same regions were 9, 10, and 7 percent, respectively. The deficiency in agricultural equipment was equally glaring. Thus the state farms were set up on the remains of the private estates, with the best land, livestock, and agricultural implements already in the hands of the peasants. This unfavorable economic base was weakened still further by lack of working capital, low productivity of labor, and notoriously poor management. In view of these handicaps, the state farms were in a position to cultivate only from one-fourth to one-half of their land, the remainder being rented out or worked by neighboring farmers on a share-cropping basis.

The difficulties experienced by state farms during the first decade of their existence were reflected in low yields, as shown by the available, although scanty,

1/ See "Recent Developments in Soviet Agriculture," by L. Volin, published in the January 1937 issue of *Foreign Agriculture*.

2/ Concerning the Socialist Plan of Land Organization and Measures of Shifting Toward Socialistic Forms of Land Cultivation, Code of Laws, 1919, No. 4, Stat. 44, Art. 29.

3/ Bogdanov, M., "State Agricultural Production," published in *Along New Paths; Results of the New Economic Policy*, 1921-1922, Moscow, 1923, p. 586.

figures. A comparison of yields on state farms with those on peasant farms does not reveal any superiority on the part of the former. A Soviet student of the problem came to the conclusion that "their (state-farm) yields hardly differ from those of the peasant farms." 4/ It was noted also that, even in regions where yields of the state farms were heavy, they were far below those on the private estates in the same regions before the revolution.

Because of the poor yields, the relatively small area under cultivation, and the fact that state farms employed and fed almost three times as many workers per unit of land as did the former private estates, the total output and especially the volume of marketable surplus grain was very small. During the difficult years of 1918-1921, state farms supplied the famine-stricken regions with a volume of grain estimated at 1.2 million bushels. But in general it may be stated that the role of the state farms in Soviet agricultural economy during 1918-1927 was of little significance. By the end of the decade, state farms cultivated less than 4 million acres, or 1.4 percent of the total crop area; they produced 1.6 percent of the total grain output and supplied less than 3 percent of the grain marketed during the year.

The fact that state farms were not able to set an example of rational utilization of equipment, of proper application of agricultural science, or of good farm management in general caused farmers to react toward them unfavorably. To the peasant they represented "a piece of * * * land which the Land Department did not give him but which it could not manage itself; as an estate where the former owner's cattle die from mismanagement and lack of food." 5/ This view persisted throughout the years of individual, small-scale farming in Russia. The hope of Soviet leaders that state farms would set an example of a superior agricultural system to be emulated by farmers failed of realization by the end of the first decade of their existence.

THE GRAIN PROBLEM AND STATE-FARM EXPANSION

Despite the failure of state farms to carry out the tasks set for them, the Soviet Government had no intention of discarding them. On the contrary, in 1925 the Government censured all those considered directly or indirectly responsible for the liquidation of a number of farms; it insisted that "the network of state farms already curtailed in recent years must be preserved and strengthened." 6/ This admonition was not complied with in the subsequent 3 years, but early in 1928 the Government, with renewed energy, launched upon a program of expanding the state-farm system.

This turning point in the development of state farms was dictated by the following considerations: (a) Difficulties experienced by the Government in procuring grain from the peasants, and (b) the slow progress of the country's agricultural economy as a whole. Aside from the poor yields so typical of small-scale farming then prevalent in Russia, Government grain procurements at fixed prices caused the peasants to curtail production. The output was large enough to cover their own needs but not sufficient to provide for the needs of the urban population and maintain Russian grain exports abroad. From the point of view of the Soviet Government, this created a dangerous situation, which could be corrected only by an active promulgation of the original agricultural policies, leading to the organization of

4/ Klimenko, E., "State Farms and the Problem of Yield," *Sovkhoz* (State Farms), Nos. 9-10, 1928, p. 5.

5/ Bogdanov, M., "Distribution of the Inheritance - Concerning the Problem of State Farm Organization," *Economic Life*, April 27, 1919.

6/ *State Farms on the IV Anniversary of October*, Moscow, 1932, p. 7.

peasant collective farms and state farms. The latter were expected to place under the direct control of the Government a new source of grain supply; furthermore, the Communists still persisted in looking upon the state farms as the lever that could be used to shift peasant agriculture to a new base, as indicated by the following:

"In the van will go the Soviet farms, the backbone of the reconstruction of the old order in the countryside. After them will follow the multitude of collective farms, as the bulwark of the new movement in the countryside. The combined work of these two systems is creating the conditions for the complete collectivization of all regions of the U.S.S.R." 2/

THE PLAN AND ITS SHORTCOMINGS

The campaign to speed up the development of the state farms was outlined in the Five-Year Plan. During the period 1929-1933, there were to be organized farms covering an area of 15 million acres. In 1933, they were expected to provide the Soviet Union with 1,728,000 short tons of marketable grain. Unlike the farms established in the preceding decade, the new farms were to average 95,000 acres. Lack of experience in managing such huge "grain factories" was admitted; yet those responsible for their establishment were of the opinion that the larger the farm the smaller would be the overhead expenses, the more economically would labor and machines be utilized, and, for this reason, the more profitable would be the establishment.

Many of the farms had to be established in sparsely populated regions, and large areas of land had to be put under cultivation for the first time. This, according to the organizers of the farms, called for a thorough utilization of modern agricultural equipment. The suggestion that at the outset 60 percent of the work should be done by mechanical power and 40 percent by animal power was rejected on the ground that the scheme would slow down the development of the state farms. In view of the fact that in the principal grain-growing regions the best land was in the hands of the peasants, the new state farms had to be organized on the less fertile land and in climatically less favorable sections of the Ukraine, Crimea, North Caucasus, Kazakstan, Siberia, Ural, and Lower and Middle Volga. A considerable part of the land was in semiarid zones: 52 percent of the land set aside for state farms had an average precipitation of 11 or 12 inches; 28 percent of from 12 to 14 inches; and only on 20 percent of the land was the precipitation above 14 inches. It should be noted in this connection that in the United States a total annual precipitation of 15 inches is considered the minimum required for grain-crop production.

QUANTITATIVE VERSUS QUALITATIVE RESULTS

Despite these drawbacks, the Soviet Government pushed the expansion of state grain farms at such a pace that by the end of 1930 the original plan had been revised upward four times. The 1932 crop area was thereby raised to 22 million acres, while the volume of grain to be delivered to the Government was revised accordingly; namely, from 1,728,000 short tons to a total ranging from 2,700,000 to 2,880,000 tons of grain.

If increased acreage of farms, growing numbers of tractors and combines, amount of invested capital, and planned expectations were indicative of successful operations, then the development of the state grain farms in 1929, and especially in 1930, were successful indeed. The real test of the progress, however, must be looked for not only in the quantitative but also in the qualitative aspects of their work. Viewed in this light, their operations revealed very serious shortcomings.

2/ Stalin, J., *Problems of Leninism*, ninth edition, Moscow, 1934, p. 545.

According to reports read before the All Union Conference of State Farm Managers, one of the basic difficulties was caused by the fact that in planning the work of the state farms the central management disregarded the varying conditions in the different regions in which the farms were set up. 8/ More than half of the farms failed to carry out their sowing and harvesting in proper time. The combined yield of all grains averaged 3.7 quintals per acre instead of the expected 4.8 quintals (1 quintal = 220 pounds), and the cost of grain production was 26 percent above the planned cost. Furthermore, in the hands of unskilled workers the intensive utilization of tractors, averaging 2,311 hours per season instead of from 500 to 600 hours on an American farm, caused them to deteriorate very rapidly. In 1930, almost 89 percent of all tractors required capital repairs, although most of them had been worked only one season. Little use was made of agricultural science. In 1931, nearly 96 percent of the state-farm area was under grains, with 72 percent of the grain area in wheat. A diversified agricultural economy through the introduction of a complex crop-rotating system in order to conserve the fertility of the soil was suggested. Such a program was rejected, however, because it called for a decrease in grain acreage at a time when the Soviet Government was anxious to get from the farms as much grain as possible - hence the official warning, "Talk concerning the transformation of our state grain farms into diversified farms must stop." 9/

To the difficulties stressed by those directly concerned with the management of the farms must be added those voiced by the Soviet Government. The immediate cause was unfavorable weather conditions, which reduced the state-farm crop very sharply. The average yield on all grain farms was only 1.3 quintals instead of 4 quintals as planned, and therefore they could turn over to the Government only 1,152,000 short tons of grain, or only 40 percent of the expected volume. According to the Soviet Government, the unfavorable developments were caused not by inclement weather but by the "crying mismanagement and unheard of criminal attitude toward Government property." 10/ Huge grain losses during harvesting and threshing were attributed to the following factors: Wilful underestimate of the yield in order to reduce deliveries; the distribution among state-farm workers of more grain in the form of bread rations than the Government norm called for; "state farm directors who view their obligations to deliver grain to the State as a matter of secondary importance, the fulfillment of which may be delayed until the needs of the farms have been fully taken care of"; and, finally, a "thoroughly unsatisfactory cultivation of the land."

MANAGEMENT, LABOR, AND WAGES

The Soviet Government did not limit itself to mere criticism; it decided to correct the situation by introducing a number of vital reforms.

To begin with, the management of the farm was decentralized and the original State Farm Grain Trust was broken up into nine regional trusts. The newly organized Commissariat of State Grain and Livestock Farms was to coordinate the activities of the regional units. In the course of time, however, the regional trusts came to be looked upon as barriers hampering the contact between the Commissariat and the individual farms. The trusts were abolished in 1935 and the state farms reverted to the old system of central administration from Moscow. But this change, too, lasted only a short time; it developed that, whatever the theoretical rights of the managers,

8/ "The Organization of Large Socialist Grain Farms," *Stenographic Report of the All Union Conference of State Farm Managers*, Moscow, 1931, p. 42.

9/ *Ibid.*, p. 103.

10/ "On the Work of the State Grain Farms," a decree issued jointly by the Council of People's Commissars of the U.S.S.R. and the Central Committee of the Communist Party, November 27, 1931.

in practice the close supervision from one main center "literally froze every initiative on the part of the director of a farm." 11/ The Soviet Government was compelled once again to decentralize the administration of the state farms by setting up a state grain farm commissariat in each constituent Republic, in addition to the Federal commissariat.

The latest reorganization is still in existence. This scheme is expected to shift a greater degree of responsibility for the administration of the state farms to the Republics, make possible a more thorough study of the needs of each state farm, and bring about a management more nearly in accord with the requirements and possibilities of the respective farms.

The difficulty of managing state farms covering 200,000 acres and more led the Soviet Government to decree that the maximum size of a farm should not exceed 140,000 acres. It was also decided to abandon some of the land that was clearly unfit for grain cultivation. For this reason the area under the state grain farms decreased from 37 million acres in 1931 to 32 million acres in 1932, while the number of farms during the same period increased from 182 to 228.

Each farm in turn was broken up into smaller sections ranging from 14,000 to 17,000 acres. These sections, in charge of submanagers, are separate production units, each with a technical labor force and the required equipment permanently assigned to it. The units are not miniature state farms but are parts of a single enterprise under one management. This is attested by the centralized system of repair shops, transportation facilities, and capital investment, the centralized supply and worker's training, as well as the centralized financing and planning of the work for all production units of the farm.

The problem of productivity of labor and labor remuneration did not escape the attention of the Soviet Government. In order to raise the efficiency of farm labor, the entire force of a state farm is divided into a number of permanent groups or "brigades" in charge of a foreman. The duty of a "brigade" is to do the work on a definite section of the field; it is held responsible for the quality of the work and for the condition of the agricultural implements with which it is entrusted. The total labor force on the state grain farms numbered 218,000 workers in 1934. All the workers are divided into skilled (permanent) and unskilled (seasonal), and in 1936 the former made up more than two-thirds of the total.

A better organization of the labor force was in itself not sufficient to insure higher productivity. Another necessary condition was the abolition of the high labor turnover on state farms among the skilled workers and higher personnel. "It must be stated without equivocation," a student of the problem pointed out, "that at the present time (early in 1932) the best forces, with which the state grain farms were supplied when their organization first began, have disappeared; the turnover is incredibly high; it is difficult to meet a tractor driver who has had work on the same farm two or three seasons in succession." 12/

From the point of view of the Soviet Government, this situation was created by the existing wage system, which failed to differentiate between quality, quantity, and type of work done on the farms. To do away with what was considered an inequitable system of remuneration, the Soviet Government decided to proceed on the basis of "whoever works more and better receives more." This principle was reiterated in

11/ Temkin, M., "Without a Plan," *Izvestiia*, September 22, 1938.
12/ *State Farms on the XV Anniversary of October*, Moscow, 1932, p. 107.

numerous decrees in subsequent years, but a decree, issued in 1935, is typical of the manner in which the Soviet Government is treating the wage problem as a means for raising the productivity of labor. 13/

Under the provisions of this decree, an operator of a 15-foot combine, harvesting 7 hectares per day, was to get 2.5 rubles per hectare and 4 rubles for every hectare above 7. If he harvested more than 160 hectares within 30 days, he was to receive a bonus of 2 rubles for every hectare above that figure and an additional bonus of 10 poods of grain, while one with a record of more than 300 hectares was to receive a special bonus in grain amounting to 25 poods. The decree also stressed that the combine operator would be remunerated only on the basis of the acreage and the quality of work actually performed, and "delays of all kinds and repairs carried out while in the field will not be paid for."

EBB OF STATE FARM WORK

An examination of the record of state farms reveals that the reforms initiated in 1931 failed to improve their work in 1932. True, it was emphasized that "the state farms must serve as models of socialist organization of agricultural production, of faster and better harvesting of the crop, of harvesting without losses." 14/ In actual practice, however, their work was even poorer than that of the collective and individual farms. The state grain farms were better equipped with agricultural implements than at any other period of their existence; in 1932 they had 11,000 combines as against 6,000 in 1931, while the area under crops was 11.2 million acres, or 460,000 acres less than in 1931. On the other hand, only 29 percent of the combines, 21 percent of the sheaf binders, and 14 percent of the threshers were in working condition. The breakdown of the machines was so widespread that their output reached the lowest level on record. The planned daily output of a combine was 44 acres, but in actual practice a combine harvested only from 2 to 14 acres a day. This explains why in 1931 the combines harvested 5.4 million acres while in 1932 the figure was reduced to 2.9 million acres.

The loss of grain sustained during harvesting and the weeds that overran many of the fields in consequence of poor cultivation of the soil reduced the 1932 crop considerably. Yield figures from the state grain farms for that year have not been made public; but, judging by the volume of grain collected from them and their seed requirements, the average yield per acre must have been not more than 2.2 quintals. The conditions on the newly organized collective farms and individual farms were not much better than on state farms. This very fact forced the Government to demand from the state grain farms the immediate fulfillment of their planned grain deliveries of 1,980,000 short tons as against 1,152,000 tons delivered in 1931.

The pressure applied by the Government in procuring this grain is illustrated by the following statement: "The struggle for every pood of grain, the struggle for the overfulfillment of the grain collection plan becomes the most important problem and a matter of honor with every worker of a state farm." 15/ Such exhortations did not meet with ready response, and even the punishments visited upon a number of state farm managers could not compel them to deliver grain which, they maintained, they did not have. Under the circumstances, the Government succeeded in collecting only 1,323,000 short tons in comparison with the planned volume of 1,980,000 tons. 16/

13/ "Concerning the Work of the Combines and Remuneration of Combine Drivers in the State Farms and Machine Tractor Stations," a decree issued by the Council of People's Commissars and Central Commitee of the Communist Party, April 19, 1935, *Prauda*, April 20, 1935.

14/ "Concerning Harvesting and Grain Collections," *Planned Economy*, No. 3, 1932, p. 9.

15/ "State Farms, Set an Example of Model Organization of Harvesting!" *Prauda*, July 5, 1932.

16/ *Agricultural Yearbook of the U.S.S.R.*, 1935, pp. 715-716.

POLITICAL DEPARTMENTS

The Government ascribed the poor results obtained by state farms not to any features inherent in their existing set-up but to sabotage on the part of the enemies of the Soviet regime, as outlined in an official decree: "Worming their way into the state farms as property custodians, bookkeepers, agronomists, storekeepers, unit managers, etc., these anti-Soviet elements are doing great damage to the state farms by premeditated wrecking of tractors and machinery, by poor cultivation of the soil, by bad care of livestock, by weakening of labor discipline, and by pillage of state-farm property and, especially, of the state-farm products (grain, meat, milk, butter, wool, etc.)." 17/

To such sabotage, in turn, was attributed the fact that "instead of exemplary work in utilizing the technical equipment of the state farms and in demonstrating the advantages of large agricultural undertakings in comparison with small individual farms, capitalist tendencies sometimes made themselves felt in the state farms; there flourished criminal negligence toward State property, barbarous treatment of tractors, automobiles, combines, and livestock; products were pillaged and wasted; the Government programs regarding the delivery of products were not fulfilled." 18/

The Soviet Government decided to remedy the situation through a stronger Communist leadership on the farms. Hence the organization of special political departments in every state farm. The head of each department was to take orders directly from the Central Political Office of the Commissariat of Grain and Livestock State Farms and was appointed or dismissed only by the Central Committee of the Communist Party. The political offices were endowed with sufficient power to exercise "control over all the branches of work and life" on the farms. More concretely, "the foremost task of the political departments of the state farms is the securing of unconditional and timely fulfillment of their obligations toward the State and, especially, the decisive struggle against attempts on the part of the managers and their assistants to oppose the narrow interests of their farms to the general interests of the State, and the struggle against the tendency to conceal surplus products instead of delivering such surplus to the State." 19/

The same decree stressed that the political departments were not to interfere with the economic management of the farms and that the managers must carry on their work on their own responsibility. Yet the decree also provided that a head of a political department was equally responsible "for the execution of the production plans." Thus, in effect, this innovation brought in its wake a system of dual management, with the preponderant influence in the affairs of state farms often exercised by the heads of the political departments.

Their advent was signalized by a clean sweep of all those whose work was considered inimical to the interests of the state farms. The number of individuals affected reached thousands. 20/ This administrative act was supplemented by additional supplies of agricultural equipment and other forms of economic assistance. The number of tractors was increased from 22,638 (510,791 hp.) to 27,948 (598,369 hp.), while combines and trucks were increased by 866 and 2,618, respectively. Perhaps even more significant was the fact that 1933 marked a definite end of acreage expansion on state grain farms. For the first time since 1929, their sown area was

17/ "Aims and Tasks of the Political Departments of the Machine Tractor Stations and State Farms," resolution of the Communist Party of January 11, 1933, *Pravda*, January 13, 1933.

18/ *Ibid.*

19/ *Ibid.*

20/ Soms, K., "Mass-Party Work of the Political Departments on the State Farms," *Pravda*, October 18, 1933.

reduced - by 3 million acres, or 23 percent below the 1932 crop area. Considering also the favorable climatic conditions in 1933, a definite improvement in state farm work was taken for granted.

As on so many previous occasions, the expectations were not realized. The harvesting plan called for the maximum utilization of all available combines. The grain losses were expected to be cut by from 3 to 4.5 bushels per acre, and utilization of hand labor to be greatly reduced. But instead of harvesting 5,700,000 acres or 70 percent of the crop area as provided by the plan, the combines harvested only 2,700,000 acres or 34 percent. The greater part of the crop had to be gathered by hand or by horse-driven implements, with which the farms were ill provided, and the entire harvesting plan was upset. The resulting delays in reaping, binding, and stacking the grain caused considerable grain losses, estimated to be from 20 to 30 percent of the crop.

Grain deliveries of the state farms were also disappointing - and the more so because even collectivized farmers, who until 1933 waged a grim struggle against the new agricultural system, delivered the volume of grain required of them by the Government. In accordance with the procurement plans, the state grain farms were to supply the Government with 1,710,000 short tons. By way of speeding up deliveries, it was decreed that the state farms *"must turn over to the Government the entire commercial output without exception and without any excuse whatever."* 21/ Failure to turn over the commercial grain remaining after the fulfillment of the quotas was to result in punishment befitting "deceivers of the Government and pillagers of socialized property." 22/ Notwithstanding these threats, the grain farms delivered to the Government only 1,098,000 short tons.

The political departments had failed to make the state grain farms do the Government's bidding, and the question of remedies came to the fore once again. That the strenuous efforts to solve the state-farm problems were not successful, while "the collective farms have conquered finally and irrevocably," 23/ caused the Government great concern. Although state farms were looked upon as the very basis of an efficient and productive system of agriculture, it was the work of the collective farms that brought the better results. Data on the investments and returns of state grain farms are not available, but the following statement from an authoritative source throws revealing light on the situation: "If the huge investments of the State and the state farms be compared with the actual results they have achieved, a tremendous disparity will appear to the disadvantage of the state farms." 24/

What were, then, the causes that brought about such a state of affairs? Early in 1934 the Commissar of the State Farms in reviewing the situation reiterated the old charges: "management on paper," lack of discipline, poor living and working conditions, and inefficient utilization of machines. That the causes were more far reaching was pointed out by Stalin, when he attacked some of the basic concepts underlying the organization of the state farms. "Large state grain farms," he maintained, "are too unwieldy, the directors are not coping with the huge state farms, the state farms themselves are too specialized, they have no crop rotation and fallow fields, they have no livestock breeding elements in their make-up. It is obviously necessary to divide the state farms and discontinue their undue specialization." 25/

21/ "Delivery to the Government of the Entire Commercial Production of state Farms is Their Most Important Duty," Order of the Commissariat of State Grain and Livestock Farms of July 2, 1933, Par. 1.

22/ *Ibid.*

23/ Stalin, J., "Report before the XVII Congress of the Communist Party," *Pravda*, January 28, 1934.

24/ *Ibid.*

25/ *Ibid.*

In this manner he rejected as unworkable two assumptions that characterized the development of the farms. The first was that, in a Soviet economy, the larger the state farm the smaller would be the cost of production. The soundness of this idea was questioned early in 1932, when it was decided to reduce the size of the farms. But the fact that they still averaged 140,000 acres indicated that the belief in the beneficence of "bigness" still persisted. Stalin's pronouncement put an end to the ideas concerning the size of a farm that had failed to stand the test of practical application.

The second assumption criticized by Stalin dealt with the problem of narrow specialization on the state grain farms. As practiced there, it meant neither reduced cost of production nor increased output per unit of land. The disregard of crop rotation, the limited use of fallow, and the planting of grain year after year could not but have a detrimental effect upon the fertility of the soil. It was stressed, therefore, that monoculture under the given circumstances "was contrary to agricultural science, completely rejecting the principle that crop rotation is one of the most important measures for increasing yield." 28/ This was the beginning of a strong campaign for the adherence to basic elements of agricultural science and for a more diversified agricultural economy on state grain farms.

RECENT DEVELOPMENTS

Stalin's criticism and suggestions did not go unheeded. The farms were greatly reduced in size; by the end of 1934 the state grain farm averaged 75,000 acres as against 122,000 acres in 1933, while during the same period the cultivated area declined from 34,000 to 23,000 acres per farm. Further diminution in size has undoubtedly taken place in subsequent years, judging by the millions of acres of state farm land turned over to the collective farms and by the increase in the number of state grain farms from 234 in 1934 to 338 in 1937.

Greater attention has also been paid to the problem of improving living conditions and raising wages in order to retain the necessary labor on the farms. Various bonuses have been offered for the fulfillment and overfulfillment of the plans for raising agricultural production. The normal wage rates of skilled workers and specialists have been increased by 15 percent, the one condition being continued employment on the same farm for 1 year; those with a 2-year record of continuous employment receive a 30-percent increase. But perhaps the most important inducement has been furnished by the decision to give the workers a "stake" in the farms. This was done by allowing them to cultivate their own gardens and keep livestock and by assisting them to build their own living quarters. This policy met with such success that in 1937 almost all the married workers cultivated their own private gardens and had their own domestic animals. The original conception of the state farm was that all workers should live in dormitories and eat in communal dining rooms, receiving all their income from wages, like factory workers. The system failed to work, partly because food was bad in communal dining rooms, dormitories were too crowded, and workers moved from one farm to another looking for better living conditions. The fact that more than 20,000 private houses have now been built for the workers has helped to keep them on the farms.

One of the first effects of these measures was a remarkable reduction in the high labor turnover, which had previously hampered the work of the farmers. In 1935, the labor turnover among combine operators and tractor drivers was estimated at from

28/ Basiuk, T., "Level of Specialization in Agricultural Production," *Socialist Reconstruction of Agriculture*, No. 5, 1934, p. 16.

10 to 15 percent, as against 60 percent in 1933 and 40 percent in 1934. [27] The reduction in the number of temporary workers reflects the decline in the labor turnover. "In the past, no one as a rule paid any attention to the number of workers hired for the entire season," [28] but the situation has changed considerably; whereas in 1934 nearly 50 percent of all the workers were seasonal, in 1937 the number had declined to about 30 percent. [29]

The decline in the labor turnover was accompanied by an increase in productivity of labor. In 1934, every 100 hectares of cultivated land called for the services of seven workers, but in 1935 it took only five workers to perform the same amount of work. In the course of the same year, the rise in output was reflected in a 13-percent increase in wages for all categories of workers. [30]

Agricultural equipment has been put to better use. In the 1936 season, a tractor plowed an average of 733 acres, as against 504 acres in 1933. In 1936, practically the entire crop was harvested by combines, the average output per combine being 628 acres as compared with 227 in 1933. This was hailed in official circles as a great achievement; but it remains true, nevertheless, that the utilization of equipment has not yet achieved a high level of efficiency. In 1937, the Soviet press abounded with complaints to that effect. They noted that on the state farms the crop was harvested less efficiently than on the collective farms, that "because of innumerable defects hundreds of combines are not being utilized altogether," and that in general "the tremendous technical resources of the state farms are not being utilized to full capacity." [31]

Slow as the improvement in the work of tractors and combines may have been, considerable economies were effected in the utilization of oil and gasoline. In the spring sowing campaign of 1935 the per-acre consumption on the state grain farms was only 30 percent of that of 1933; during harvesting, the per-acre consumption of oil and gasoline was only half that in 1933. [32]

Improvements have also been noticeable in the cultivation of the soil. From 1933 to 1936 the area under fallow was increased from 2,745,000 acres to 5,245,000 acres, while during the same period the area under fall plowing showed an increase from 1,449,000 acres to 3,879,000 acres. The relatively shorter schedules of the sowing and harvesting operations of the state grain farms is yet another sign of recovery. In 1933, for instance, even the farms located in the south could not complete the harvest before December; but in 1936 most of the farms throughout the Soviet Union had gathered in their crops by the end of August. Narrow specialization was beginning to give way, though very slowly. Livestock on the state grain farms are increasing; and on November 1, 1937, the farms possessed about 725,000 head of livestock, of which nearly two-thirds were sheep. On the other hand, diversification of crops has shown little progress. In 1936, over 95 percent of the cultivated area was still under grain.

A real achievement of state grain farms in 1935 was the completion of grain deliveries by September 15, or two and one-half months earlier than in 1934. They returned also the grain loans that the Government had granted them on previous

27/ Kachkin, P., "Productivity of Labor in the State Grain Farms," *Socialist Reconstruction of Agriculture*, No. 2, 1938, p. 90.

28/ *Ibid.*, p. 90.

29/ Iurkin, T. A., "State Farms on the Eve of Third Five-Year Plan," *Bolshevik*, No. 22, 1937, p. 30.

30/ *Ibid.*, p. 93.

31/ *Pravda*, July 30, 1937 and *Izvestiia*, August 3, 1937.

32/ Kachkin, P., *op. cit.*, p. 92.

occasions, and at the same time they completed the delivery of an additional volume of grain in consequence of a special order issued by the Government. Altogether they supplied a total of 1,872,000 short tons of grain compared with 1,351,000 tons in 1934. This represented 6 percent of the entire volume of grain collected by the Government in 1935 from all sources. Thus, only by 1935 had the state grain farms fulfilled the task set for them by the First Five-Year Plan, a task that called for the production of 1,728,000 tons of commercial grain within 4 or 5 years. The fulfillment of the grain-collection plans was reported in both 1936 and 1937, but data concerning the quantities are not available.

Table 1. Soviet Government grain collections from state grain farms, 1929-1935

Year	Planned	Actual		Percentage state-farm deliveries are of total Government collections
		Quantity	Percentage of planned	
	1,000 short tons	1,000 short tons	Percent	Percent
1929.....	-	55	-	0.3
1930.....	-	523	-	2.1
1931.....	a/ 2,790	1,163	42	4.6
1932.....	1,980	1,327	67	6.4
1933.....	1,710	1,093	64	4.2
1934.....	1,296	1,351	104	4.6
1935.....	1,466	1,872	128	6.0

a/ Average of minimum and maximum planned figures.

Compiled from official Soviet sources.

ARE THE STATE FARMS PROFITABLE?

Notwithstanding the progress made by the state farms in the past 3 years, it was not sufficient to put them on a self-sustaining and profitable basis. The Soviet Government held that in their work the state grain farms still fell short in two essentials. First, they failed to reduce the cost of production in any considerable degree; second, the yield on the farms was low. Year after year they have produced less than was anticipated, even though they have carried out the procurement plans since 1934. On the other hand, the cost of production has been above that planned. The crux of the matter, from the official point of view, is in the low yield. In 1935, "even our best state farms," an official pointed out, "failed to produce a satisfactory yield."

To a large extent the same held true in subsequent years. It was stressed that "we must compel the state farms to yield abundant crops." 33/ The land, however, failed to respond to such pressure. As in previous years, yield figures for 1936 and 1937 have not been published, but the statement that "even in 1937, despite the favorable conditions, a number of state farms show a shamefully low yield," 34/ points to the seriousness of the problem. All efforts are concentrated now upon higher yield, particularly because only a yield larger than that of 1935 by as much as from 50 to 100 percent could raise the output to the expected level. Certain features of the state farms already described make it very doubtful whether they will yield good crops even if men, machines, and agricultural science be attuned to this purpose.

33/ Iurkin, T. A., from a speech delivered before the Council of Commissariat of State Grain and Livestock Farms, *Socialist Reconstruction of Agriculture*, No. 3, 1936, p. 230.

34/ Iurkin, T. A., "State Farms on Eve of Third Five-Year Plan," *Bolshevik*, No. 22, 1937, p. 35.

The combination of low yield and high cost of production has caused state farms to operate at a loss. During the first years of their existence, the problem of whether they were profitable economic organizations was not given much consideration. All that mattered was the increase in grain output - cost what it might. This was justified for the following reasons: "Profitableness cannot be looked upon from a purely commercial point of view or from that of a given moment. It must be considered from the standpoint of the national economy as a whole, from the long-range perspective. * * * All this holds true not only of industry but even to a greater degree of the collective and state farms." 35/

Table 2. Statistical summary of state grain farms of the Soviet Union, 1929-1934 a/

Item	1929	1930	1931	1932	1933	1934
Number of farms.....	55	143	182	228	234	357
Total area (in million acres)	12.5	30.4	37.1	31.7	28.5	26.7
Cultivated area (in million acres).....	0.4	2.9	10.7	11.2	7.9	8.1
Percentage grain is of total area.....	99.5	99.7	99.3	95.8	98.3	97.1
Wheat area (in million acres)	-	2.5	8.8	8.0	5.5	5.3
Wheat area as percentage of total Soviet wheat area....	-	2.9	9.5	9.3	6.7	6.0
Average size of a farm (in 1,000 acres).....	228	213	204	139	122	75
Average cultivated area per farm (in 1,000 acres).....	6.7	20.5	59.0	49.1	34.0	22.7
Total number of workers employed.....	-	-	125,143	170,665	189,304	218,142
Permanent.....	-	-	74,140	104,542	100,792	137,994
Seasonal.....	-	-	51,003	66,123	88,512	80,148
Number of tractors.....	2,922	9,792	18,775	22,638	27,948	27,913
Tractor capacity (in 1.000 horsepower).....	61,427	250,743	474,144	510,791	598,369	646,548
Number of combines.....	45	1,741	6,339	11,477	12,343	14,075

a/ Only data available for later years as follows: 1935, cultivated area 9 million acres, percentage grain is of total 95.5, number of seasonal workers 47,000; 1936, percentage grain acreage is of total 95.2.

Agricultural Yearbook of the U.S.S.R., 1935, pp. 728-729.

The Government treated the state grain farms as it did any other "infant" industry. But since 1934 the Government has become increasingly aware of this problem created by a practice that has continued since the inception of the state-farm movement. As investments in the state grain farms kept rising, while returns remained admittedly low, it was finally announced that "the basic criterion of evaluating the successful work of socialist agricultural undertakings is absence of subsidies, profitable operations, and accumulations. The results of 1935 show that all conditions for achieving such results are at hand." 36/

The latter part of the statement was disputed by a number of farm managers. They maintained that the existing wage rates and prices charged by the Government

35/ Stalin, J., *Problems of Leninism*, ninth edition, p. 498.

36/ Chernov, M., "Agriculture on the Upgrade," *Socialist Reconstruction of Agriculture*, No. 11, 1935, p. 54.

for various materials with which the state farms were supplied made very difficult reductions in cost of production. 37/ Another complaint was that the Government collected the grain from the state farms at a very low price. Some managers were of the opinion, therefore, that "the solution of the problem of carrying on state-farm operations without subsidies depended upon the change in prices for grain and livestock products delivered to the Government." 38/ Official spokesmen condemned this line of reasoning on the ground that a new change in prices would not alter the fact that the key to profitableness is in higher yield, improved production, and elimination of inefficient farming. It was further stressed by the Government that in 1935 the farms possessed all the means to achieve such ends, but that as late as 1937 the problem of how to make them profitable was yet to be solved. 39/

Meanwhile, there is evidence that, as the agricultural output of the collective farms rises, the reliance of the Government on state farms as a source of grain lessens. Since the middle of 1935, the area under collective farms has been increased at the expense of state farms. Incomplete figures show that the landholdings of all state farms were reduced by more than 40 million acres, a decrease of 25 percent from their 1934 land area. The total reduction of land under the state grain farms is not given, but, judging from individual cases, it must be very considerable.

CONCLUSION

In summarizing the development of state grain farms, it is well to recall that they were expected to achieve the following aims: Increase the country's agricultural output; serve as "model" agricultural centers; and prove to the peasants that large-scale agriculture is vastly superior to their small-scale, individual farming. Did the farms achieve these aims? To answer this question is to point out the role played by these farms in the Soviet agricultural economy.

The state grain farms unquestionably added to the country's agricultural resources. During the period 1931-1935, the total grain area of the Soviet Union was increased by an annual average of 9 million acres. Considering the great efforts exerted by the Government in order to increase the country's agricultural output, the extension of the sown area under grain farms must be viewed as an achievement. On the other hand, it must be kept in mind that the grain output, in consequence of low yields, was not large enough to compensate for the huge investments that accompanied the rapid acreage expansion.

Since 1935, the work of state grain farms has shown considerable improvement, but not to the extent of raising them to the position of "cultural agronomic centers." If the proper application of agricultural science is the real test of a model agricultural undertaking, then the state grain farms have failed to pass it, judging by the following statement:

"It is no exaggeration to say that in the entire system of the Commissariat of State Farms there is not a single grain farm where agricultural science was raised to a proper level. By the proper level we have in mind essentially elementary conditions: sowings on fallowed and fall plowed land; good quality of the fallow and fall plowing; timeliness of sowings and utilization of a rational crop rotation

37/ Iurkin, T. A., "State Farms in the Front Rank," *Socialist Reconstruction of Agriculture*, No. 11, p. 65.

38/ Barmin, M., "Concerning Profitableness of State Farms," *Socialist Reconstruction of Agriculture*, No. 12, 1935, p. 70.

39/ Targulian, O., "Concerning the Agricultural Third Five-Year Plan," *Bolshevik*, No. 12, 1937, p. 73.

system. These elementary measures are being applied in all the better organized * * * collective farms but they are not being made use of by the greater number of state farms." 40/

In view of the above, state grain farms were unable to convince the peasants of the alleged benefits of large-scale farming. They had, therefore, little to do with the shift of the Russian peasants from their small, individualistic to a large, collectivistic system of agriculture. During the years 1929-1933, when the greater number of collective farms were organized, the work of the state grain farms was notoriously poor. If the latter had really been models of a reconstructed agricultural economy, collectivization of agriculture in the Soviet Union would have proceeded at a much slower pace.

The state grain farms were set up under difficult conditions. Everything that goes into the making of a modern large-scale agricultural undertaking had to be built from the ground up. This would not have been an easy task even if the necessary prerequisites had been at hand - such as good land, experienced management, skilled labor, and ample time in which to organize the farms. But during the period under consideration, many of these elements were completely lacking, or available only to a limited degree. Furthermore, in organizing the state grain farms the Soviet leaders proceeded on a number of theoretical assumptions that proved unworkable.

One of these theories was that large-scale industry and large-scale agriculture follow the same patterns of development. Without going into a discussion of whether or not this holds true under any or all circumstances, suffice it to say that in the Soviet Union, and in the period under consideration, it was not substantiated. It was revealed that, in both fields given good management, proper equipment, and skilful workers, it is easier to manage and control the work of a large industrial plant than of a large farm; that, because of such an uncontrollable factor as climate, for instance, the planning programs of state grain farms must be less rigid and more flexible than those of industrial undertakings; that narrow specialization of state grain farms retards, rather than advances, their development; and that, notwithstanding the claims made by Soviet economists, the notion that "the larger the farm, the smaller the cost of production" cannot be supported as a general proposition.

Finally, it is obvious now that state grain farms are not mere adjuncts to tractors and combines, although the importance of the latter should not be underestimated. The validity of the following statement made by Professor Tulaikov in 1931 has been fully demonstrated:

"I understand very well that the utilization of the tractor is an exceedingly important aspect of the work to which we have to pay particular attention. It must be stressed, however, that we are not building grain farms in order to utilize tractors, but are utilizing tractors in order to receive a certain output of grain. * * * I believe that the farm as such has the right to exist and is not a mere adjunct to the tractor. Granting this premise, agricultural science is entitled to more consideration." 41/

Soviet authorities are aware now that, while modern agricultural machines can make the application of agricultural science more effective, they cannot take its place.

40/ Feigin, V., "Concerning the Profitability of State Grain Farms," *Socialist Reconstruction of Agriculture*, No. 12, 1935, p. 65.

41/ *The Organization of Large Socialist Grain Farms*, Moscow, 1931, p. 90.

The state grain farm has always been viewed by the Government as the true socialist type of agricultural enterprise and more in consonance with the Soviet economy as a whole than is the collective farm. But the Government's policy of decreasing the land area of the state grain farms and adding it to the collectives indicates that the latter are the more efficient producers. It is possible that at some future time the state grain farms will become efficient producers, but this will be achieved not because of any inherent advantages peculiar to these farms, but rather by a combination of all those factors that are essential to good farming under any economic system.

WORLD RICE PRODUCTION AND TRADE . . .

. . . By Fred J. Rossiter*

Several far-reaching developments have been taking place in world rice production and trade during the past 10 years. Outstanding among them are a great increase in production in many of the deficit producing countries, the maintenance of production in the large surplus producing area of southeastern Asia, greater dependence on the part of some importing countries on rice from their colonial possessions, and the necessity for several former major importing countries to regulate their imports in the interest of national economy. Largely as a result of these developments, United States exports of rice during 1933-1937 averaged 60 percent smaller than in the 5 years 1926-1930.

World rice production, excluding that of China, increased by approximately 8 percent during the decade ended with 1936. A primary factor stimulating rice production in the major deficit rice-producing countries was the world-wide depression. This development was particularly true in the raw-material-exporting countries of South America and the Far East, where because of the reduced value of their exports, increased attention was given to the production of rice and other foodstuffs, which they had been importing in large quantities. Production was also increased in the colonial possessions of a number of European countries.

Of even greater significance than changes in production, however, have been the shifts with respect to international trade in rice. Many of the major importing countries have greatly reduced their dependence on imported supplies. Exporting countries have been compelled, therefore, to look for other markets. Since many of these surplus countries have political ties with European importing countries, there has been a tendency for them to increase their exports to Europe under preferential arrangements. Since, however, European markets have been unable to absorb a quantity sufficient to offset the loss of the importing markets in the Orient and South America, the total volume of international trade in rice has declined by approximately 20 percent in the last decade.

In South America, nearly all countries have adopted programs aimed at increased rice production and reduced imports. In the Far East, the Japanese Empire is approaching self-sufficiency. On the other hand, several European countries, notably England, France, and the Netherlands, have maintained or even increased their volume of rice imports, but they are now obtaining their requirements largely from colonial possessions or countries with which they have close political ties. A number of other European countries, especially Germany and Poland, have greatly reduced rice imports.

These developments have had most unfavorable repercussions on the rice industry and trade of the United States. Though rice is a minor crop in the United States, the export market in recent years has been an important factor in determining the welfare of rice producers. In the period 1926-1930, about half the exports went to foreign countries, the remainder being shipped to insular possessions, principally Puerto Rico and Hawaii.

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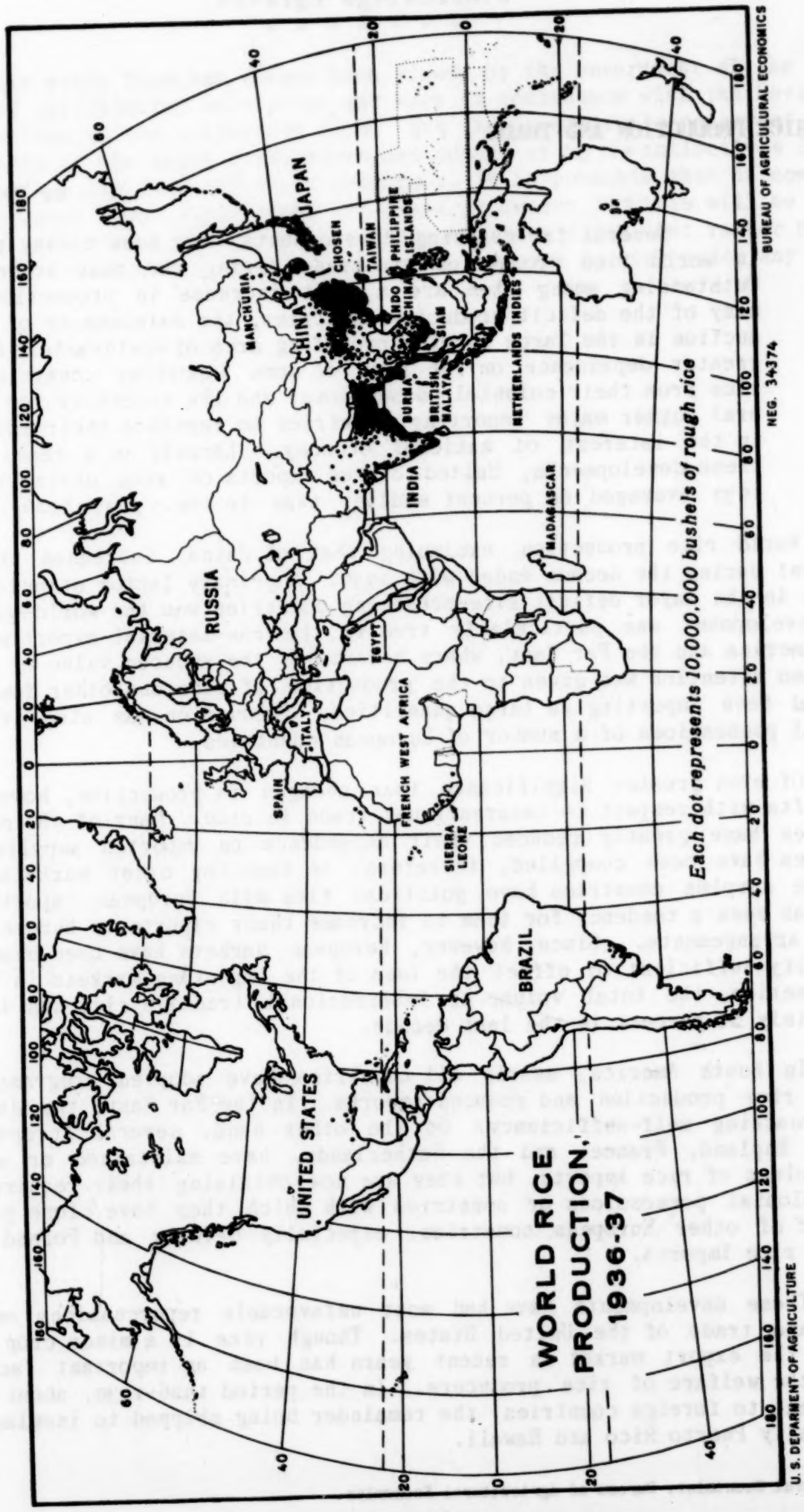

WORLD RICE PRODUCTION, 1936-37
Each dot represents 10,000,000 bushels of rough rice
JAPAN
CHOSEN
TAIWAN
PHILIPPINE ISLANDS
MANCHURIA
CHINA
INDO CHINA
SIAM
BURMA
BRITISH MALAYA
NETHERLANDS INDIES
INDIA
MADAGASCAR
RUSSIA
EGYPT
ITALY
SPAIN
FRENCH WEST AFRICA
SIERRA LEONE
BRAZIL
UNITED STATES
BUREAU OF AGRICULTURAL ECONOMICS
NEG. 34374
U. S. DEPARMENT OF AGRICULTURE

Fig. 1.

In recent years, however, our rice exports have declined - from the 1926-1930 average of 300 million pounds annually to less than 25 million pounds in 1936. Exports to European markets during the 1926-1930 period averaged 150 million pounds annually, to Japan 55 million, and to South America 50 million. In 1936, Europe took only 10 million pounds, Japan practically none, and South America about 5 million pounds. Our exports increased considerably, however, in 1937 and 1938, with the largest part of the gain represented by shipments to Cuba. United States shipments to Puerto Rico and Hawaii have been well maintained because of their preferential position in those markets.

Despite the decline in exports of rice from the United States, production increased from the 1926-1930 average of 43 million bushels annually to 49 million in 1936, 53 million in 1937, and 54 million in 1938.

WORLD PRODUCTION

Rice is produced in many countries, but it is primarily a crop of the Orient, for over 95 percent of the world's supply is produced in the tropical and semi-tropical regions of southern and eastern Asia. In these regions, rice is by far the most dependable and productive cereal crop that can be raised. Most of the crop there is grown under irrigation, often by intensive methods, and on lands well suited for its production. The concentration in the Far East is indicated in figure 1 showing the distribution of rice production by countries during 1936-37.

Table 1. World production, average 1926-27 to 1930-31, annual 1935-36 to 1937-38 [a/]

Country	Average 1926-27 to 1930-31	1935-36	1936-37	1937-38 [b/]
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
Argentina.....	333	1,642	[c/]	[c/]
Brazil.....	47,829	57,506	61,260	[c/]
Japan.....	553,700	522,526	612,290	603,012
Chosen.....	143,678	162,646	176,111	239,502
Taiwan.....	59,829	82,923	86,910	83,952
China.....	[c/]	2,500,552	2,492,444	[c/]
Netherlands Indies..	259,112	293,461	282,823	[c/]
British Malaya.....	15,455	25,490	26,338	24,569
Philippine Islands..	107,487	98,780	118,592	109,066
Indochina	294,661	296,269	309,494	[c/]
Siam.....	219,260	231,623	165,582	230,084
Burma.....	374,086	375,114	352,526	339,932
India [d/]	1,919,207	1,735,271	2,084,445	[c/]
Egypt.....	19,938	34,614	33,947	18,184
French West Africa..	15,185	18,860	20,698	[c/]
Madagascar.....	32,438	30,870	33,320	31,556
Italy.....	32,649	36,025	35,957	36,270
Portugal.....	1,049	2,680	2,827	[c/]
Spain.....	15,072	14,386	14,308	[c/]
United States.....	42,753	38,784	49,002	53,004

[a/] 1 bushel is equivalent to 27.8 pounds of cleaned rice; 3.6 bushels equal 1 barrel of rough rice.

[b/] Preliminary.

[c/] Not available.

[d/] Excluding Burma.

Compiled from official sources.

WORLD TRADE

A large part of the population of China, India, Japan, Ceylon, Indochina, Siam, the Netherlands Indies, the Philippine Islands, British Malaya, and Madagascar depends upon rice as its chief food. Yet only a relatively small part of the world's crop moves into export channels, because the bulk of the crop produced in the Orient is consumed in the countries of production, leaving only a relatively small quantity to supply the deficit in nearby consuming areas and in more distant markets.

Of all the great rice-producing countries of the Far East, only Burma, Indochina, and Siam produce large surpluses for the export market. Normally, the principal exporters outside of Asia are Italy, the United States, Spain, Egypt, and Brazil.

The leading importing countries are also located in the Far East. These countries - China, Japan (until quite recently), India proper, the Netherlands Indies, Ceylon, British Malaya, and the Philippine Islands - must normally supplement their large domestic crops by imports from adjacent producing areas to meet their full requirements. The most important rice-importing countries outside of the Orient are the European countries - France, Germany, the Netherlands, and the United Kingdom - Cuba, and Argentina.

Figure 2 shows the volume of rice moving into export channels from the principal surplus producing countries during 1936 compared with the average for the 5 years 1926-1930. The volume of rice imported by the principal deficit producing countries during the same periods is indicated in figure 3. Tables 2 and 3 show the extent to which total imports and exports for the principal countries have declined during the past decade.

Table 2. Rice exports from principal exporting countries, average 1926-1930, annual 1935-1937 [a/]

Country	Average 1926-1930	1935	1936	1937 [b/]
	Million pounds	Million pounds	Million pounds	Million pounds
British India [c/]	4,952	3,772	3,023	1,551
Indochina	3,340	3,585	3,698	3,292
Siam [d/]	2,954	3,282	3,426	[e/] 2,348
Italy.....	452	281	313	345
United States.....	290	165	22	204
Spain.....	120	59	-	-
Egypt.....	113	155	303	325
Brazil.....	31	162	90	69
Madagascar.....	26	5	5	9
Total.....	12,278	11,466	10,880	8,143

a/ Includes flour, meal, and broken rice.

b/ Preliminary.

c/ Burma included.

d/ Year beginning April.

e/ Incomplete figure taken from American consular report.

Compiled from official sources.

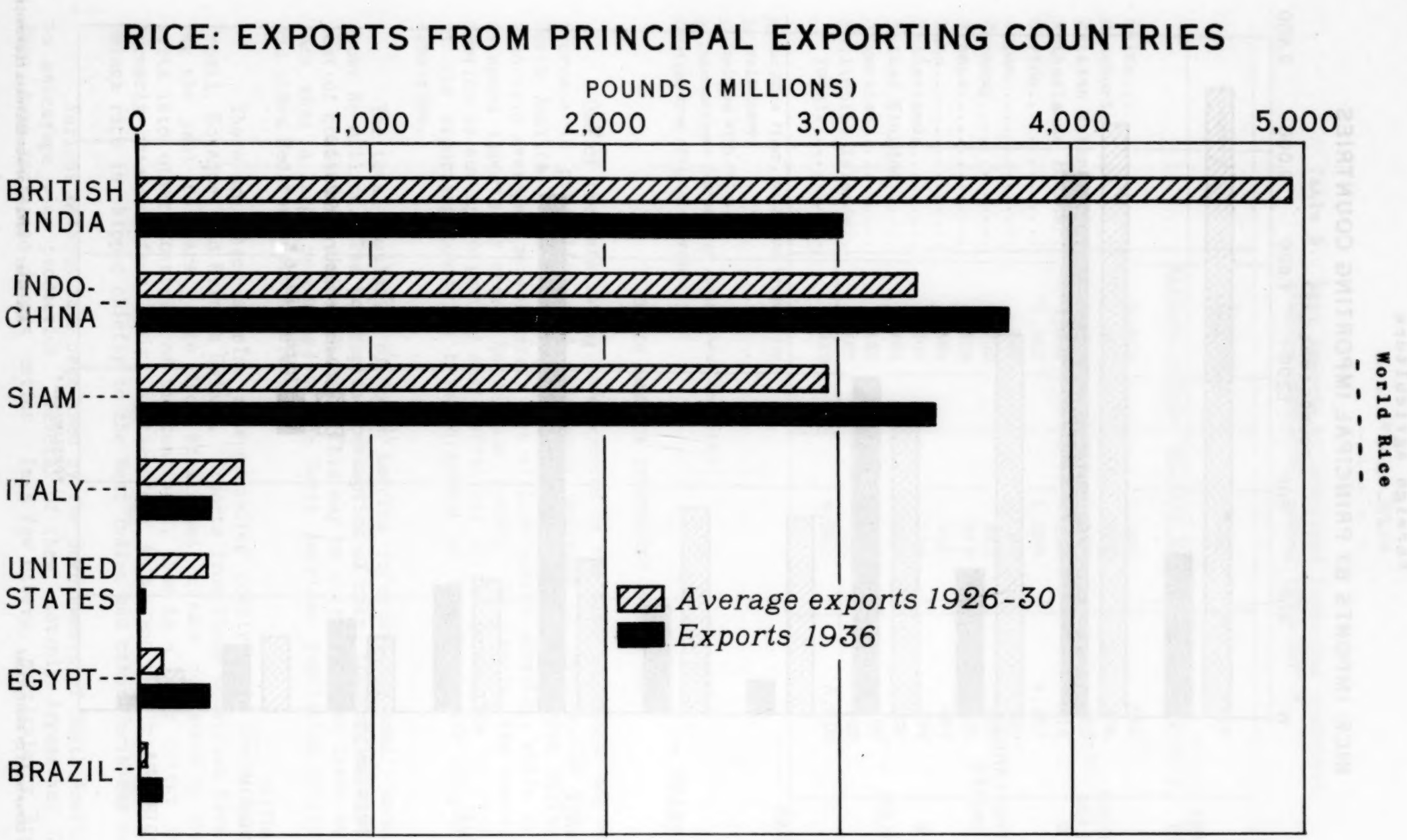

RICE: EXPORTS FROM PRINCIPAL EXPORTING COUNTRIES
POUNDS (MILLIONS)
0
1,000
2,000
3,000
4,000
5,000
BRITISH INDIA
INDO-CHINA
SIAM
ITALY
UNITED STATES
EGYPT
BRAZIL
World Rice
Average exports 1926-30
Exports 1936
U. S. DEPARTMENT OF AGRICULTURE
NEG. 34381
BUREAU OF AGRICULTURAL ECONOMICS

Fig. 2.

RICE: IMPORTS BY PRINCIPAL IMPORTING COUNTRIES

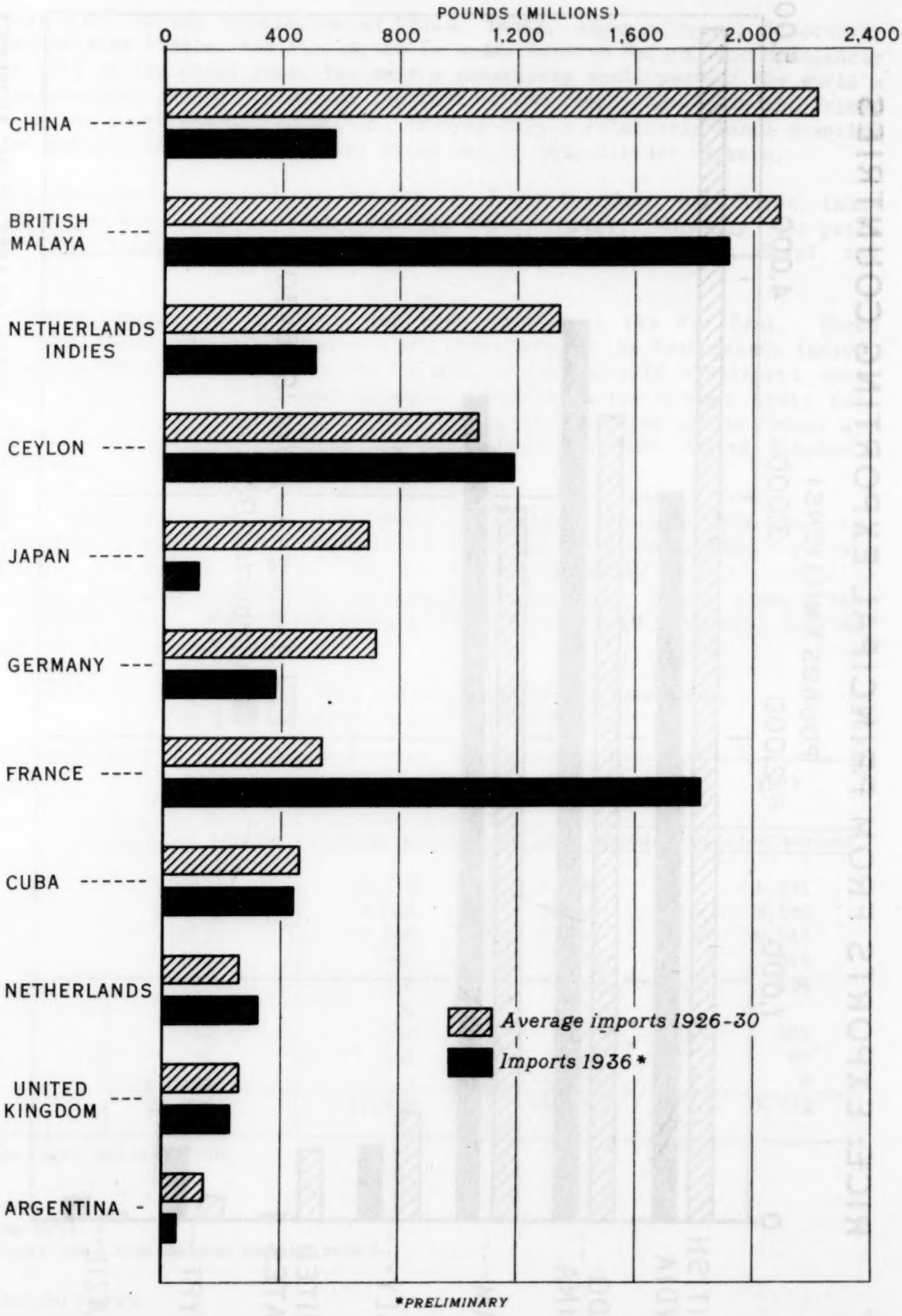


Fig. 3.

Table 3. Rice imports by principal importing countries, average 1926-1930, annual 1935-1937 a/

Country	Average 1926-1930	1935	1936	1937 b/
	Million pounds	Million pounds	Million pounds	Million pounds
China	2,218	2,329	580	713
Manchuria	c/	177	236	160
British Malaya	2,090	1,777	1,919	1,964
Netherlands Indies	1,344	856	514	d/ 390
Ceylon	1,067	1,228	1,181	1,162
Japan	697	87	122	74
Germany	723	421	381	486
France	538	918	1,825	1,571
Cuba	464	494	444	494
Netherlands	261	216	324	d/ 369
United Kingdom	261	244	232	245
Argentina	149	78	50	73
Philippine Islands	107	16	202	163
Total	9,919	8,841	8,010	7,864

a/ Includes flour, meal, and broken rice.
b/ Preliminary.
c/ Included with China.
d/ *International Yearbook of Agricultural Statistics.*
Compiled from official sources.

SOUTH AMERICA INCREASING PRODUCTION

One of the outstanding developments in the rice situation has been the great increase in production, and consequent decrease in imports, in the countries of South America. Net imports for all South American countries during the 5 years 1926-1930 averaged approximately 320 million pounds annually, while in 1935 exports exceeded imports by nearly 80 million pounds. As a whole, the continent of South America is now approximately self-sufficient in the production of rice, the surplus of the exporting countries being disposed of largely in the neighboring deficit countries.

The total population of South America is relatively small, amounting to only about 80 million. The per-capita consumption of rice, however, is more than double that of continental United States. This may be attributed, at least in part, to the fact that a large percentage of the South American population originated in Spain and other Mediterranean countries.

There are three surplus rice-producing countries in South America; namely, Brazil, Ecuador, and British Guiana. Exports from these countries have trebled during the past 10 years. Rice from Brazil and Ecuador now makes up the bulk of imports into other countries of the continent, thus to a large extent replacing rice formerly obtained from Italy, southeastern Asia, and the United States. British Guiana rice is shipped chiefly to the West Indies and other Caribbean markets.

Various methods have been used by the Governments of South American countries to encourage rice production. Several of them, notably Argentina, Colombia, and Peru, have increased import duties. In a few others, particularly Brazil, special

special attention has been devoted to the introduction of improved varieties. In some, governmental loans to rice growers have constituted an important incentive for increased production. Some have assisted in developing irrigation projects. Still others have employed foreign rice specialists, and a few give rewards to farmers for producing high yields.

Table 4. Rice imports and exports of South American countries, average 1926-1930, annual 1935 and 1936 a/

Country	Imports			Exports		
	Average 1926-1930	1935	1936	Average 1926-1930	1935	1936
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Argentina b/	148,617	78,157	49,913	305	682	924
Rough	(44)	(126,544)	(76,252)	-	-	-
Cleaned	(148,590)	(44)	(2,844)	(305)	(682)	(924)
Bolivia	10,318	4,167	12,478	0	0	0
Brazil	3,748	0	0	30,776	208,643	117,593
British Guiana	705	0	0	30,952	23,590	46,297
Chile	46,010	30,622	35,560	-	0	0
Colombia	97,355	20,988	26,587	0	0	0
Ecuador	704	22	0	15,542	50,552	19,246
Peru	50,358	45,944	73,634	-	-	-
Uruguay b/	18,246	3,763	160	-	-	2,255
Rough	(22,487)	(5,666)	(259)	(0)	-	(189)
Cleaned	(4,365)	(265)	(0)	-	-	(2,138)
Venezuela	24,868	21,076	c/	0	0	-
Total	400,929	204,639	198,332	77,575	283,467	186,315

a/ Cleaned rice except where rough is indicated.

b/ Rough and cleaned; rough converted on the basis of 100 pounds equal 61.728 pounds of cleaned.

c/ Not available.

International Yearbook of Agricultural Statistics.

Brazil largest South American exporter

The largest increase in production in South America has occurred in Brazil, where the crop now exceeds that grown in the United States. During the 5 years 1926-1930, the Brazilian crop averaged about 48 million bushels of rough rice annually, while the 1936-37 crop amounted to 61 million bushels. The rice acreage in that country has increased from 1,600,000 acres 10 years ago to around 2,450,000 acres at present.

The Brazilian export surplus of rice has been increasing rapidly. During 1935, exports amounted to 209 million pounds compared with the 1926-1930 average of only 31 million pounds annually. American Blue Rose rice was introduced into Brazil in 1929 and is now produced in large volume for the export trade. The quality of this rice is said to be fully equal to that of the same variety grown in the United States.

Argentina largest South American importer

During the past decade, rice production in the Argentine has increased fivefold and is continuing to expand. Nevertheless, Argentina has been for many years,

and still is, the largest rice importer in South America. Practically all of the Argentine imports formerly consisted of cleaned rice. At present, most of the imports are of rough rice. This shift was effected in 1932, when the import duty on cleaned rice was raised considerably in order to encourage an expansion in the domestic rice-milling business.

Other South American countries

Peru, at present the second largest importing country in South America, has increased its rice acreage about 30 percent during the past 10 years. Following the record harvest of 1932, Peru was self-sufficient for 3 years; but, after the short crops in 1935 and 1936, imports were again necessary.

Chile, the third largest rice-importing country in South America, will probably continue to import for some time, since production is very small. While some progress has been made in expanding acreage, the crop at the present time represents probably less than 2 percent of total consumption.

Colombia imported nearly 100 million pounds annually during the period 1926-1930 but now is importing only about 25 million pounds. Production has increased but not sufficiently to make up for the decline in imports. As a result of the high import duty imposed in 1931, the price of rice has been very high and a shift to other foods has taken place.

Uruguay has increased its crop from less than 15,000 bushels of rough rice 10 years ago to nearly a million bushels at present. Imports during the same period were reduced to a relatively small volume. During the past 2 years, Uruguay has attempted to develop an export trade in rice but has found it difficult to compete with Brazil.

Venezuelan rice imports have declined only slightly during the past decade. While the Government has encouraged an expansion in production, very little progress has been made. Venezuela still depends largely on foreign countries for its rice supplies.

ASIATIC DEFICIT COUNTRIES INCREASE PRODUCTION

About 95 percent of the world's rice crop is produced and consumed in Asia. The Asiatic countries fall into one of two groups; namely, the surplus or the deficit producing group. Burma, Siam, and French Indochina are the three large surplus producing countries. Most of the other countries of the Orient are usually net importers of rice.

During the past 10 years, most of the deficit countries of Asia have been increasing their rice crops and the surplus areas have been maintaining production. At the same time, total imports of the deficit countries have been greatly reduced. Three of them - namely, China, Japan, and the Netherlands Indies - reduced their annual rice imports in the aggregate during that period by approximately 3 billion pounds of milled rice, a quantity more than double the annual United States production. In the meantime, the Asiatic surplus producing countries have been exporting increased volumes of rice to European markets, while United States rice exports to Europe have declined sharply.

China decreases imports

China, the world's largest rice producer, was also for several years the largest rice-importing country. During 1926-1930, rice imports into China averaged

2,218 million pounds.[1] This quantity, it is estimated, was approximately 4 percent of China's total annual rice consumption. The three surplus producing countries of southern Asia supplied about 95 percent of Chinese imports. Very little rice from the United States was ever received by China.

China has been a deficit rice producer for several decades, although at the close of the World War exports for a time practically equaled imports. In 1921, imports again mounted rapidly, and from 1922 to 1930, with the exception of 1 year, they exceeded 1.5 billion pounds annually. In 1931, the Government inaugurated a program to reduce agricultural imports by increasing the duties and improving transportation facilities and rural credit. By 1936, China's rice imports had been reduced to 580 million pounds of milled rice, the smallest since 1920.[2] This large reduction released a tremendous quantity of rice for consumption in other markets.

No statistics are available to indicate the extent, if any, to which rice production in China has increased during the past 10 years. It is doubtful whether any material increase in rice acreage has taken place, as rice prices have not been sufficiently high to cause much of a shift in crop acreage. Until the recent outbreak of Sino-Japanese hostilities, political stability and improved transportation were probably more important than increased production in reducing Chinese imports of rice. Good rice yields during the past 3 years (1935-1937) have also been an important element in reducing import requirements. The imposition of an import duty of approximately 50 cents per 100 pounds was also a factor, since it enabled rice from the surplus producing areas in Central China to be sold at a lower cost than foreign rice in the deficit areas of Shanghai and the cities of South China. Rice consumption in China, it is believed, has not decreased in proportion to the decline in imports.

Current hostilities have badly disrupted transportation facilities, thus making it difficult for rice from surplus producing districts in China to reach the deficit areas. This may result in increased imports as long as the Sino-Japanese conflict continues.

While rice imports into Manchuria have increased recently, the production trend has also been definitely upward. During 1926-1930, the Manchurian rice crop averaged only about 15 million bushels of rough rice, whereas during the past 2 years it has exceeded 30 million bushels. The Japanese Government has assisted many Korean farmers to emigrate to Manchuria, and these people have engaged in rice production wherever water is available. The Chinese settlers, however, are largely from North China and most of them are not familiar with rice farming.

Japan increases production

Japan is the third most important rice-producing country, being exceeded only by China and India. It has reduced rice imports considerably during the past 10 years by increased domestic production. The success of the Government's campaign to encourage production is indicated by the increase from 456 million bushels of rough rice in 1912 to the record harvest of 644 million bushels in 1933. The bumper crop of 1933, combined with the regular imports from Chosen and Taiwan, gave a supply greatly in excess of domestic requirements. The Government, therefore, in order to improve prices removed large quantities of rice from the market by direct purchases. Since 1933, the Government has shifted its emphasis toward increased production of other commodities.

1/ Manchurian imports were included until July 1, 1932.

2/ Imports into Manchuria in 1936 amounted to 236 million pounds. This represented a considerable increase over normal imports a few years earlier and is attributed to the recent increased industrial activity and a larger Japanese population.

Rice production has increased not only in Japan proper, but also in Chosen and Taiwan. Both Chosen and Taiwan are surplus producing areas; and, as they are in the Japanese Empire, most of the surplus is exported to Japan proper. For the past 6 years, an average of about 2.5 million pounds of rice from Chosen and about 1.5 million pounds from Taiwan have been exported to Japan annually. Japanese authorities stressed increased production of rice in both Chosen and Taiwan for a number of years, but recently they have shifted emphasis to other commodities, such as cotton in Chosen and sugar cane and tobacco in Taiwan. The increased production of rice in Japan proper, Chosen, and Taiwan during the past 10 years may be attributed only in small part to a larger acreage. Most of the increased output resulted from higher yields brought about by greater use of improved varieties and of fertilizers.

Net imports of rice into Japan from foreign countries during the 5 years 1926-1930 averaged approximately 700 million pounds annually. During the past 3 years (1935-1937), they have averaged only about 67 million pounds. The bulk of Japanese imports has always been obtained from the "Big Three" rice-exporting countries of southeastern Asia. These countries, therefore, have felt most the reduction of imports by Japan. For several years, however, Japan also furnished an important outlet for California rice. From 1926 to 1930, average imports from the United States equaled approximately 17 million pounds of milled rice and 38 million pounds of broken rice. During the past 4 years, Japan imported altogether only 4,000 pounds of rice from the United States.

Netherlands Indies imports reduced

The Netherlands Indies was the third largest rice-importing country in the world during the 5 years 1926-1930. Imports, however, have declined sharply during the past decade because of reduced purchasing power. Domestic production during the same period has increased only to a small extent.

The national economy of the Netherlands Indies depends almost entirely upon the exportation of such commodities as sugar, rubber, tobacco, and copra. Until 1930, exports of these products continued at a high level and the country enjoyed prosperity. When the world depression began to have its effect, the income of many rural people and of the working class was reduced to such an extent that they no longer could afford to buy imported rice. The production of export commodities, therefore, was reduced and an increased quantity of foodstuffs, principally corn, was grown.

The Government of the Netherlands Indies, because of the unfavorable economic situation after 1930, encouraged increased production of rice in an effort to make the country as nearly self-supporting as possible. These efforts have been rewarded by an increase of about 10 percent. This increase has been approximately sufficient to offset the 55-percent reduction in imports during the past decade. The three large rice-exporting countries of southeastern Asia are the source of about 99 percent of imports into the Netherlands Indies.

British Malaya largely dependent upon imports

British Malaya, one of the world's largest importers of rice, is now taking a somewhat smaller volume compared with a decade ago. When the value of Malayan exports of rubber and tin was high, imports of rice were large. With the decline in exports of these commodities during the world depression, many of the inhabitants were thrown out of work and migrated to other regions. Rice imports consequently declined.

Rice production in British Malaya has always been relatively small and, compared with rubber production, is considered unprofitable. It is claimed that the unprofitableness is due to insects and diseases, inadequate water supply, and lack of fertilizers. Both Chinese and native farmers prefer rubber because it requires much less work, and in years of good prices the profits greatly exceed those from rice farming. Up to 1931, a farmer with a small rubber plantation was considered prosperous. He could afford to buy imported rice for his whole family and clothe them in silk, whereas a rice farmer had to live on dried fish and wear cotton garments.

In 1931, the depression became very acute in British Malaya, and the Government made an effort to reduce the country's tremendous dependence upon imported food supplies, principally rice. In 1932, a Drainage and Irrigation Department was set up, which not only has been making new areas available for rice cultivation but, in addition, has been improving irrigation facilities or areas already devoted to rice. Moreover, the Department of Agriculture during recent years has been active in distributing improved rice seed and introducing improved methods of cultivation. Principally as a result of these activities, rice production has increased by 65 percent during the past decade.

Production at the present level, however, is still equal to only about one-third of the country's total consumption. Malayan imports come largely from Siam and Burma, with a small percentage from Indochina. As long as Malaya continues to export large quantities of rubber and tin, the country will be an important market for rice produced in the southern Asiatic countries.

Ceylon a large rice importer

Ceylon, also one of the large rice-importing countries, is again purchasing as much foreign rice as it did a decade ago. During the world depression, rice imports decreased considerably in spite of the relatively small domestic production. During the years 1931-1934, rice imports declined nearly 50 percent compared with the 1926-1930 average. As the national economy of the country depends largely upon the exportation of tea, rubber, and copra, its ability to import large quantities of rice hinges upon its ability to find export markets for those products.

Rice production data for Ceylon are not available for recent years. The 1927-1930 crops averaged a little over 13 million bushels, which at that time represented less than 30 percent of total consumption. Available information indicates that there has been very little increase in production. The rice acreage is larger than that of any other crop in the country. Because of the lack of irrigation, the crop must depend in most sections upon rainfall, and farmers are hesitant to increase production.

The Government of Ceylon for many years has been interested in expanding rice production in order to make the country more nearly self-sufficient in regard to food. In the fall of 1937, it proposed to purchase local rice at a price fixed high enough to encourage production. At the same time, it proposed to limit rice imports by granting licenses to importers, thereby restricting the amount brought into the country.

It is believed that, if the Government could undertake irrigation projects to furnish a reliable water supply, rice production could be increased considerably. The cost of such projects, however, might be prohibitive. As long as Ceylon is able to export large quantities of tea, rubber, and copra, it is believed that rice imports will continue to equal approximately two-thirds of domestic requirements. Ceylon imports rice largely from Burma and to some extent from British India and Siam.

The Philippine Islands reduce rice imports

The Philippine Islands have always been a deficit rice-producing area. During recent years, however, imports have declined considerably. Rice production has increased steadily from 34 million bushels of rough rice in 1910 to 111 million bushels in 1930. Production during that period, however, did not keep pace with consumption, and imports continued in substantial quantities. The 1926-1930 imports averaged 107 million pounds.

Since 1930, rice production in the Philippines has been irregular, with no particular trend evident. Imports have also been irregular, in some years amounting to less than 20 million pounds. When good crops are harvested, the Philippines are practically self-sufficient. In 1934, in fact, exports exceeded imports for the first time. In years of short crops, however, imports of considerable volume are required.

Total rice consumption in the Philippines since 1930 has been somewhat reduced, and the people are using a larger amount of cheaper foods, such as potatoes and beans. This development is attributed largely to the reduction in national income. In 1936, therefore, the Government set up the National Rice and Corn Corporation for the purpose of stabilizing rice prices. It was granted the authority to import rice free of duty and in case of domestic overproduction to export the surplus.

The Philippine Government has been encouraging rice production for several years, and it is believed that imports in the future will continue small. It is doubtful whether production will be increased to the point where the country would become an annual net exporter, since Philippine rice would be unable to compete with that produced at lower costs in the three large surplus rice countries of southeastern Asia.

British India increases rice imports

British India, including Burma, is an exporter of rice; but, when Burma is excluded, India is the world's largest rice importer. Since Burma now has an independent government and produces a large surplus for export, it is considered separately in this discussion and in the tables wherever possible.

India, excluding Burma, is of especial interest because it is one of the few countries whose net rice imports are now larger than they were a decade ago. The country produces about 30 percent of the world's rice crop and ranks second to China as the largest producer. Indian imports from foreign countries now exceed exports and, in addition, from 2 billion to 4 billion pounds are shipped in annually from Burma.

The trend in rice production in India was upward until 1918. Since that time production has remained at a more or less stable level.3/ Although the acreage has increased slightly compared with that of a decade ago, average yields are slightly lower.

Surplus producing Provinces of eastern India ship rice abroad rather than to the Indian deficit regions because of more favorable transportation facilities. Annual rice exports from India, which go largely to other British possessions - principally Ceylon and British Malaya - have averaged approximately 300 million pounds during the past 4 years compared with over 600 million pounds a decade ago. Yet the

3/ Information just received indicates that the 1938 crop is the largest in recent years.

rice deficit in India has become steadily larger. As a result, not only have exports from the country declined, but imports from foreign countries and Burma have increased substantially.

Table 5. Indian acreage, production, imports, and exports of rice, 1937 with comparisons [a/]

Crop year	Acreage	Production	Calendar year	Imports from		Exports
				Burma	Foreign countries	
	Thousand acres	Million bushels		Million pounds	Million pounds	Million pounds
Average 1925-26 to 1929-30....	68,369	1,903	Average 1926-1930.....	2,042	249	620
1934-35.....	69,816	1,922	1935.....	3,635	548	295
1935-36.....	71,002	1,735	1936.....	3,866	358	209
1936-37.....	72,516	2,084	1937.....	3,139	b/	360

a/ Excluding Burma.

b/ Not available.

International Yearbook of Agricultural Statistics, Sea Borne Trade of British India, and American consular reports.

Imports from foreign countries during the past 3 years averaged over 400 million pounds, compared with 250 million a decade ago. Imports from foreign countries come largely from Siam and Indochina. In addition, India purchases large quantities from Burma, such purchases now averaging around 3.5 billion pounds annually, compared with 2 billion 10 years ago. Total imports at the present time equal about 5 percent of domestic consumption. No import duty was levied on rice until April 1935, when a rate of 12 annas per maund (33.2 cents per 100 pounds) was imposed on broken rice. Other grades may still be imported free of duty.

As a result of the decline in rice exports and the increase in imports, the Indian Government in recent years has attempted to improve the quality of the rice produced in order that a better grade might be made available for exportation to foreign countries. Rice experiment stations have been furnishing improved rice seed to farmers.

ASIATIC SURPLUS PRODUCING COUNTRIES MAINTAIN PRODUCTION

Burma, Siam, and Indochina, the world's three largest surplus rice-producing countries, furnish approximately 95 percent of the rice that enters international trade. These three countries, usually referred to as the "Big Three," are not only maintaining rice production but possibly producing slightly more now than a decade ago or in any previous period. The national economy of these three countries depends to a very great extent upon the value of rice exports. Although low prices for rice during the world depression brought economic difficulties, these countries continued to grow large rice crops and to sell rice for whatever could be obtained.

Favorable climatic conditions for rice production - namely, warm weather and heavy rainfall - prevail in these three countries. The temperature is sufficiently warm 12 months of the year for the growing of rice. Rainfall is abundant, and serious droughts seldom occur. In some sections, rivers overflow the rice fields, furnishing cheap irrigation. An excess of moisture at harvest time, however, sometimes injures the quality of the grain.

Table 6. Rice acreage in Asiatic surplus producing countries, 1913-14, 1928-29, and average 1933-34 to 1937-38

Year	Burma	Indochina	Siam
	1,000 acres	1,000 acres	1,000 acres
1913-14	10,065	8,546	4,521
1928-29	12,708	13,568	5,896
Average 1933-34 to 1937-38	12,721	a/ 13,481	6,946

a/ Average 1933-34 to 1936-37.

International Yearbook of Agricultural Statistics, and American consular reports.

Other factors, such as fertile soil and cheap labor, add to the advantages these countries have in the production of rice at low cost. A large amount of rice is grown in river valleys, which are frequently enriched by flood waters. The population is dense, labor is cheap, and the standard of living is low. The majority of the people are compelled to live almost entirely on the food they can produce.

Rice exported from Burma, Siam, and Indochina is generally considered poor in quality. This, however, results more from the fact that it is only partially milled and graded than from any real inferiority in the quality of the grain. The people are not accustomed to using rice that is cleaned, polished, and graded in accordance with western standards. The Netherlands and Germany import large quantities of rough and semicleaned rice from these countries and finish milling and cleaning it for sale to European and other foreign markets. Siam has done more in the way of grading rice for quality than have Burma and Indochina.

Burma continues large exports

Burma, the largest exporter of the three major surplus producing countries, has maintained its acreage, production, and total exports at a stable level during the past 10 years. Exports to foreign countries during the past 4 years were somewhat reduced, but they were offset by increased shipments to India.

On an average, Burma exports 60 percent of its total rice crop, a much higher percentage than for any other important producer. Furthermore, the Burmese people are among the world's heaviest rice consumers, averaging about 350 pounds per capita annually. About 65 percent of the total population is engaged in rice farming.

Burma is about the size of Texas and is very mountainous. Moreover, only a little more than 10 percent of its area is actually cultivated. Approximately two-thirds of the cultivated land, however, is used for growing rice. A large harvest is obtained nearly every year, as the monsoons seldom fail to bring heavy rainfall, which insures an abundant water supply for the crop. The heavy rains, however, result in substantial quantities of rice being harvested in a wet condition every year.

During recent years, fully 50 percent of Burmese rice exports have gone to India. Ceylon is the next most important market, followed by British Malaya. Exports to Germany and the Netherlands Indies have declined sharply during the past 10 years. On the other hand, exports to the United Kingdom have increased from approximately 100 million pounds to 200 million pounds annually. Empire preference accounts largely for this increase.

Table 7. Burmese acreage, production, and exports of rice, 1937 with comparisons

Crop year	Acreage	Production	Calendar year	Exports to	
				India	Foreign countries
	Thousand acres	Million bushels		Million pounds	Million pounds
Average 1925-26 to 1929-30.....	12,516	368	Average 1926-1930.....	2,042	4,218
1934-35.....	12,686	339	1935.....	3,635	3,218
1935-36.....	12,503	375	1936.....	3,866	2,541
1936-37.....	12,634	353	1937.....	3,139	3,366
1937-38.....	12,862	340			

International Yearbook of Agricultural Statistics, Sea Borne Trade of British India, and American consular reports.

Indochina rice exports near record levels

Following a decline during the world depression, production and exports of French Indochina, which ranks second to Burma as a rice exporter, are again near record levels. Production and exports for the past 2 years have been higher than for any other period except the peak years of 1927, 1928, and 1929.

Rice is the outstanding factor in the national economy of the country, national income depending largely on returns derived from rice exports. On an average, about 30 percent of production is exported annually, and rice constitutes about 70 percent of the value of total exports.

Table 8. Rice exports from Indochina, by country of destination, average 1926-1930, annual 1935-1937

Country	Amount exported				Percentage of total			
	Average 1926-1930	1935	1936	1937	Average 1926-1930	1935	1936	1937
	Million pounds	Million pounds	Million pounds	Million pounds	Percent	Percent	Percent	Percent
France.....	462	768	2,194	1,487	15.3	20.5	58.4	45.3
Other Europe.....	212	178	202	195	7.0	4.8	5.4	5.9
French colonies.....	52	244	367	386	1.7	6.5	9.8	11.7
Cuba.....	63	37	10	108	2.1	1.0	.3	3.3
Japan.....	243	5	5	4	8.1	.1	.1	.1
China (including Hong Kong).....	1,289	1,780	370	866	42.7	47.5	9.9	26.4
Philippine Islands..	91	18	128	3	3.0	.5	3.4	.1
British Malaya.....	184	106	69	119	6.1	2.8	1.8	3.6
Netherlands Indies..	267	151	32	11	8.9	4.0	.8	.3
British India.....	a/	263	234	27	a/	7.0	6.2	.8
Others.....	152	200	148	81	5.1	5.3	3.9	2.5
Total.....	3,015	3,750	3,759	3,287	100.0	100.0	100.0	100.0

a/ Included with others.

American consular reports.

The world depression, however, brought about a considerable shift in the export markets of Indochina. During the period 1926-1930, China, Japan, and the Netherlands Indies took 60 percent of the rice exports and only 23 percent went to European markets. In 1936, only 11 percent of the total was shipped to the three oriental countries above named, whereas Europe provided a market for 64 percent. France and the French colonies have greatly aided Indochina by increasing their purchases from an average of 514 million pounds during 1926-1930 to approximately 1,775 million pounds annually for the past 4 years.

During recent years, the Government of Indochina has been interested in improving rice production and expanding export markets. The Director General of Agriculture has been furnishing improved seed to farmers in some districts and has been instrumental also in improving irrigation systems. In order to facilitate exports, the Government reduced the export duty on rice in 1931 and again in 1933. The rate was again slightly reduced in May 1938, the tax at the present time amounting to 5.4 percent ad valorem for cargo rice.

Siam production at a high level

In Siam, as in Burma and Indochina, the national income depends very largely upon the rice crop. Approximately 90 percent of the nation's total arable land is devoted to rice production. On an average, about 45 percent of the total crop is exported to foreign countries, and rice represents about 70 percent of the total value of all exports.

The size of the rice crop and the volume of exports have been increasing for several decades. The record crop harvested in 1932 amounted to 250 million bushels, and the record exports in 1934 amounted to 4,412 million pounds. The crop in 1936 was much below average because of the poor distribution of rainfall that year, and exports were small. Since the Government is encouraging rice production, it is believed that the crop in the near future will again approach the 1932 record level.

Because of increasing trade barriers, Siam during recent years has had considerable difficulty in finding markets for its surplus rice. Many countries, not only in Asia but also in Europe, have increased import duties on rice. Siam, unlike Burma and Indochina, has no "mother" country to help relieve distressed economic conditions. It has been necessary for Siam, therefore, to continue selling on the world market at whatever price could be obtained.

The two largest markets for Siamese rice have been British Malaya and China. Exports to Malaya vary from 30 to 45 percent of the total and have shown little trend. Exports to China, however, averaged approximately 40 percent of the total a decade ago and by 1936 had declined to only 23 percent. Siam's third best market rests between Europe and Cuba. Before the World War, European countries took about 15 percent of exports from Siam, but from 1926 to 1930, only about 4 percent. Because of the low prices prevailing during the depression, European countries increased their takings of Siamese rice. In 1936, Siam exported about 300 million pounds to the European market, or approximately 10 percent of total exports. Shipments to India have increased during the past few years, largely as a result of the efforts of the Siamese Government to bring about a more favorable balance of trade with that country.

Future of the rice industry in the "Big Three"

The future production of rice in Siam, Burma, and Indochina will depend upon the availability of foreign markets. The three countries will undoubtedly continue

as the major surplus rice-producing areas for a long time to come, not only because of their traditional dependence on the rice crop, but also because of the climatic and economic advantages they possess in the production of rice. While improvement in the quality of the rice offered for export may be expected, European countries will probably continue to import large quantities of rough and semicleaned rice from the southeastern Asiatic countries for further processing and subsequent resale.

AFRICAN RICE PRODUCTION SHOWS ONLY SLIGHT INCREASE

Rice is not a very important crop in any one country in Africa, although the total production of the continent exceeds that of any other except Asia. In general, the developed agricultural areas of Africa lie on the fringes of the continent. Rice is of importance in only three areas: namely, Egypt, French West Africa, and Madagascar. Total production for Africa is now slightly larger than it was a decade ago.

Africa, as a continent, is a deficit rice area. The surplus from Egypt is not sufficient to offset the import requirements of the rest of the continent. In addition to Senegal, in French West Africa, two other areas are significant rice importers; namely, the Union of South Africa and the Island of Mauritius, each of which purchases approximately 100 million pounds annually. Most of the other African countries import small quantities, but detailed statistics are lacking.

Egypt important surplus rice producer

Egypt is the only rice-producing country in Africa of any significance in international trade. Until 1932, the rice acreage in that country was quite irregular because of uncertainty regarding the amount of water that would be available for the crop. During the period 1926-1930, the average was only 324,000 acres.

A few years before the world depression, the Egyptian Government became interested in improving and expanding rice production. By 1932, Government irrigation projects had provided larger quantities of water. This permitted expansion of the rice acreage in several new districts, and from 1932 to 1936 the average area in rice was 434,000 acres.

As a result of the increased production, Egyptian net exports of rice increased from an average of 70 million pounds during 1926-1930 to 200 million pounds, the average for 1933-1936. Egyptian rice is exported largely to European countries. In 1937, the Egyptian Government decided to reduce rice acreage in order to increase wheat production. This decision was the result of the low prices then received for exported rice and the increased volume of wheat and flour imports.

Madagascar becomes net importer of rice

In Madagascar, rice acreage and production during the past decade have shown little change. The French Government opened new producing areas by providing irrigation but prohibited rice production in certain districts near large cities because of the unhealthy living conditions brought about by standing water. Rice production in Madagascar now equals about three-fifths that of the United States.

Madagascar was an exporter of rice during the 5 years 1926-1930, net exports averaging about 25 million pounds. Since 1930, exports have declined and imports have increased. During the period 1933-1935, the country was on an import basis, with average net imports of approximately 15 million pounds. This shift in the trade has been attributed to the increase in exports of other agricultural commodities,

mainly sugar, peanuts, and castor beans. As a result, a larger number of the inhabitants are now able to buy rice instead of living mostly on other native products, such as manioc (a starchy root).

French West Africa and Sierra Leone expanding production

In French West Africa, rice production during the past decade has been increasing rapidly. During the 5 years 1926-1930, the planted area averaged 835,000 acres, but by 1936 it had been increased to 1,117,000 acres. The Ivory Coast, French Guinea, and the French Sudan, the principal rice-growing areas in French West Africa, each shared in this increase.

The French West African colonies, as a group, still constitute a deficit rice-producing area. During 1926-1930, imports averaged 112 million pounds, while during the next 4 years the average was but 64 million. French Senegal, the most important deficit area, takes about 90 percent of total imports for the group.

Sierra Leone, a British possession in West Africa, increased rice production from an average of 13 million bushels during 1926-1930 to 15.2 million bushels in 1936. This colony during the 1926-1930 period imported a net average of approximately 3.5 million pounds, but for 1935 and 1936 it was a net exporter of about 1.25 million pounds annually.

EUROPE INCREASES RICE PRODUCTION AND IMPORTS

Rice is a very minor crop in European agriculture and is grown in only a few southern countries. Nevertheless, total production has increased during the past decade just as it has on all the other continents. Larger harvests have been particularly noticeable in Italy and Portugal. Production in Spain and the Soviet Union, however, has been irregular. Among the European producers, Italy and Spain are the only two with a surplus for export. All other nations of Europe produce little or no rice. Total European rice imports at the present time are larger than a decade ago. This is due to increased imports into France, as imports into the other countries as a group have declined.

Italy increases production

Italian rice production has been increasing steadily for many years. The 1937 harvest, which amounted to 36,264,000 bushels, is reported to have been the largest in the history of the country. Production at the present time is about 10 percent above that of a decade ago. Acreage has changed very little during the past 14 years, but yield has been increasing steadily. The 1937 yield was the highest on record.

Despite increased production, rice exports from Italy have declined since 1930. Available information indicates that the domestic consumption of rice has increased and the consumption of wheat has declined. The monthly average price of rice from 1930 to date frequently has been below the price of wheat. Prior to 1930, the reverse was generally true.

The Italian Government has been regulating the price of rice and wheat for some time. The domestic price is maintained at a level enabling farmers to use unemployed people in their farm work. Farmers are compelled to pay a fixed wage but are guaranteed a certain price for their crop. The regulated prices vary from time to time, depending upon supply and demand and the prices of other commodities.

The Government, moreover, negotiated trade agreements with Germany, Hungary, and former Austria, in which those countries agreed to import a fixed quota of Italian rice annually. In addition, the Government for several years has been paying a subsidy on rice exports. The amount of the subsidy has varied, depending upon the country of destination, the grade of rice exported, the world price, the domestic situation, and other factors. The funds for the export subsidy are obtained from a tax on rice marketed in Italy.

The Government has attempted to maintain rice exports at the 1926-1930 level of approximately 440 million pounds annually. During recent years, however, exports have averaged only a little over 300 million pounds. Italy a decade ago had a large export market in South America, but now shipments are almost entirely to European countries. The principal markets are Germany, Hungary, former Austria (the quota countries), and Yugoslavia. These markets take largely the low and common grades. France and Switzerland are markets for small quantities of quality rice, which is sold in competition with American.

Spanish rice exports declining

Rice production in Spain has shown very little trend for many years, although harvests from 1926 to 1930 averaged slightly higher than for any other period. Spain has long been a surplus rice-producing country. Since 1930, however, Spanish rice exports have been declining. During 1935, they amounted to only 55 million pounds compared with the 1926-1930 average of 120 million pounds. The export markets for Spanish rice are almost entirely in Europe, the United Kingdom being the most important. Formerly substantial exports were made to South America. A few years ago, the Spanish Government inaugurated a program under which a semiofficial organization purchased the entire crop and sold to both domestic and foreign buyers. Whether this monopoly is still in operation is not known.

Principal deficit rice countries of Europe

Europe, the continent with the smallest area, is by far the largest net importer of rice, with average imports during the 5 years 1926-1930 amounting to 1,674 million pounds annually. In recent years, however, imports have increased and in 1935 amounted to 2,156 million pounds. During the past 10 years, Europe has increased imports from Asia and South America but has reduced purchases from North America. France, Czechoslovakia, Belgium, the Netherlands, and Sweden have increased their rice imports; but Germany, Poland, Portugal, and Latvia are now importing smaller quantities. The leading European importers are France, the United Kingdom, Germany, and the Netherlands.

France, which was second to Germany as an importer of rice during the 5 years 1926-1930, has in recent years become by far the largest European importer. Net imports during the former period amounted to 350 million pounds, whereas for 1935-1937 they averaged 1,400 million pounds annually.

The principal source of supply has been the French colony of Indochina, whose Asiatic rice markets have been shrinking rapidly in recent years. The disposal of the huge Indochina surplus has constituted a problem of serious concern to the Government of France. The large rice imports by France, combined with the French wheat problem, resulted in numerous governmental regulations, including an increase in import duties on rice from foreign countries. In 1935, the French Government paid approximately $10 per metric ton for diversion of Indochina rice from the French market. During recent years, approximately 90 percent of the French rice imports have come from Indochina.

The successful disposal of the greatly increased rice supplies in France during recent years was made possible in part by the use of a substantial quantity for livestock feed and in part by the increased consumption as food because of the higher prices and lower quality of wheat bread.

France has been steadily increasing rice import duties for many years. The latest increase was on June 26, 1938, when the general rate for milled rice was placed at 240 francs per 100 kilograms ($2.98 per 100 pounds at current rate of exchange) and the minimum rate at 120 francs ($1.49 per 100 pounds). At the same time, an additional special tax of 2 francs per 100 kilograms (2.5 cents per 100 pounds) was added for all rates and grades. Although under the trade agreement of June 15, 1936, milled rice imported from the United States was granted the minimum rate, at the present time milled rice from the United States must pay $1.51 per 100 pounds and "undermilled" the general rate of $1.29 per 100 pounds. The new rates make it difficult for American rice to enter the French market.

Germany has reduced both imports and domestic consumption of rice in recent years. During 1926-1930, Germany imported a large volume of rough and semimilled rice for processing, substantial quantities of which were reexported, principally to other European markets. The processing of rice for sale to other markets has fallen off sharply during the past few years and now amounts to only about 60 million pounds annually compared with 300 million a decade ago. Annual consumption in Germany declined during the past 10 years from about 500 million pounds to approximately 350 million.

For many years the principal source of German imports was Burma. In recent years, however, imports of Burmese rice have declined more than 50 percent, whereas those from Italy and Mexico have increased. Ten years ago, Germany was the largest buyer of United States rice, but this trade has declined until at the present time it is of little significance.

The United Kingdom during the past decade has offered a steady market for rice, with net imports averaging about 250 million pounds annually. There has been a shift, however, in the source of these imports, due largely to the lower rates of duty on rice from Empire countries. The effect of this Empire preference is noted in table 9. Imports from Empire sources, principally Burma and Australia, have increased greatly during the past 10 years, whereas those from foreign countries have declined. Imports from the United States declined about 80 percent.

Table 9. United Kingdom rice imports and reexports, by country of origin, average 1926-1930, annual 1935-1937

Period	Imports					Reexports
	Empire countries	United States	Brazil	Other countries	Total	
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
Average 1926-1930	92	35	a/	152	279	14
1935.....	156	13	17	71	257	12
1936.....	124	6	8	112	250	18
1937.....	162	7	a/	90	259	14

a/ Less than 500,000 pounds.

Annual Statement of the Trade of the United Kingdom.

Increased imports into the United Kingdom from Australia are especially noteworthy. During the past 2 years they have amounted to about 20 million pounds, compared with an average of approximately 500,000 pounds a decade ago. Rice production in Australia during the past 10 years increased from 1 million to 2 million bushels, with most of the increase exported to the United Kingdom.

The Netherlands, although one of the leading rice-importing countries, consumes a relatively small volume. Rough and semimilled rice, obtained largely from Burma and the Netherlands Indies, make up a large percentage of imports. In recent years substantial quantities have also come from Egypt. After the rice is milled, a large proportion is reexported. The Netherland rice trade has remained fairly constant during the past decade. Rice consumption has also remained steady, averaging from 50 to 70 million pounds annually. The Netherlands, however, is now importing a much smaller volume of milled rice from the United States than 10 years ago.

Portugal produces considerable quantities of rice but is also a significant importer. Rice production has more than doubled during the past 10 years, and the area planted has increased from 23,400 acres in 1926 to 60,000 in 1935. As a result of increased production, rice imports into Portugal have steadily declined. Imports in 1935 amounted to only 40 million pounds compared with the annual average of more than 100 million pounds during 1926-1930.

Soviet Union production of rice during recent years has averaged approximately 12 million bushels. Net imports have varied from 20 million to 100 million pounds annually, depending upon the policy of the Government.

Among the other countries of Europe, the principal rice importers are Belgium and Czechoslovakia, each averaging about 100 million pounds annually, and Poland, Greece, and Hungary, which import on an average approximately 50 million pounds each. Among these countries, Greece is the principal importer of United States rice.

NORTH AMERICA INCREASES PRODUCTION

For the North American continent as a whole, rice production showed a substantial increase during the past decade because of the large increase in the United States. Production in Mexico and Cuba has remained steady, but in the United States the 1937 and 1938 crops were 25 percent above the average harvests of 1926-1930. Canada and Cuba, the two largest rice-importing countries, are now taking as large a volume as they did a decade ago. The United States and Mexico are the only surplus producing countries in North America. Mexico is now exporting an increased amount and the United States a decreased quantity compared with the 1926-1930 average.

Canadian imports from the United States lower

Canada is a steady market for about 45 million pounds of rice annually. The principal sources of these imports have been Burma and the United States. During the period 1926-1930, the United States furnished fully 33 percent of the total; but, because of the increased British Empire preference under the Ottawa Agreements, the proportion in recent years has fallen to approximately 25 percent.

About two-thirds of Canadian imports consist of rough rice, since such rice is imported free of duty as against a rate of $1 per 100 pounds for cleaned rice. Under the Ottawa Agreements, cleaned rice from Empire countries is imported at one-half the general duty rate. United States rice, as a result of the trade agreement with Canada, now pays a duty of 72 cents per 100 pounds under the most-favored-nation clause.

Cuba largely dependent upon foreign sources

Rice is an important article in the diet of the Cuban population. Per-capita consumption usually exceeds 100 pounds annually, with total consumption for the island estimated between 350 million and 500 million pounds annually. Most of the rice consumed in Cuba is imported, as domestic production supplies no more than 5 or 10 percent of total consumption. The bulk of imported rice usually originates in the great rice-producing areas of the Orient - Siam, Burma, and French Indochina.

Despite the fact that the United States enjoyed a preference in duty of 40 percent from 1904 to 1934 and of 50 percent under the trade agreement of 1934, this country has not usually been an important source of supply, principally because of the much lower prices obtaining for Far-Eastern rice. For the last 5 months of 1937, however, the Cuban Government made certain temporary changes in the duties, reducing the duty on American rice and increasing it on that from other sources, thereby substantially increasing the preferential treatment enjoyed by American rice.

As a result of this increased duty differential, imports of American rice into Cuba in 1937 were the largest on record. United States trade figures show that exports to Cuba in 1937 were 136 million pounds compared with less than 3 million pounds in 1936. For the first half of 1938, American exports were also much larger than for the corresponding period of the previous year, because American exporters were able to sell at lower prices by adding large percentages of broken rice. With reduced supplies of broken rice in the United States, the quantity available for mixing for export will be less and the price of such mixtures may not continue competitive with that of oriental rice in the Cuban market.

On January 1, 1938, the duty on United States rice was restored to the level provided in the trade agreement ($1.85 per 100 gross kilograms - 220.46 pounds - on hulled and semihulled rice), whereas duties and surcharges on rice of non-American origin, excepting Siamese rice, were fixed at $3.80 per 100 gross kilograms. Because of Cuba's unfavorable balance of trade with Siam, the duty and surcharges on rice from that country are fixed at $4.80 per 100 gross kilograms. American rice, therefore, enjoys at present a tariff preference of slightly more than 50 percent in the case of all rice except that from Siam, and of slightly over 60 percent in the case of the latter.

Table 10. Imports of rice into Cuba, average 1926-1930, annual 1935-1937

Year	United States	British India	Siam	French Indochina	Others a/	Total
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds
Average 1926-1930	21	335	16	3	94	469
1935.....	60	174	221	16	23	494
1936.....	11	49	357	22	5	444
1937 b/	115	68	234	73	4	494

a/ Others consist of shipments of processed rice from European countries.

b/ Preliminary.

Republica de Cuba, Comercio Exterior.

Mexico Increases Exports

Mexican rice production has remained steady during the past 10 years, ranging between 3 and 4 million bushels. Exports, however, have increased. In 1935 net exports amounted to 40 million pounds and in 1936 to 30 million, compared with an annual average of only 13 million pounds during 1926-1930.

United States Production Increased

Rice has always been a minor crop in the United States, but the trend of production has been upward for the past 40 years. By 1916, the United States had become a net exporter of rice. As production has increased more rapidly than consumption, the export market has become more and more important in determining returns to growers. In the immediate pre-war years, exports to foreign countries and shipments to possessions constituted only 25 percent of production. For the period 1926-1930, the proportion of the crop leaving the country had increased to 50 percent, but during the 5 years 1932-1936 it declined to 36 percent. The decline has been entirely in exports to foreign countries, as shipments to possessions have remained almost unchanged for the past 10 years.

The outstanding feature of the rice industry has been the remarkable upward trend in yield per acre during the past 40 years as a result of the use of better seed, improved irrigation technique, and farm-management practices. Rice yields in the past 5 years have averaged 49 bushels per acre compared with 24.2 bushels per acre in the 5 years 1895-1899.

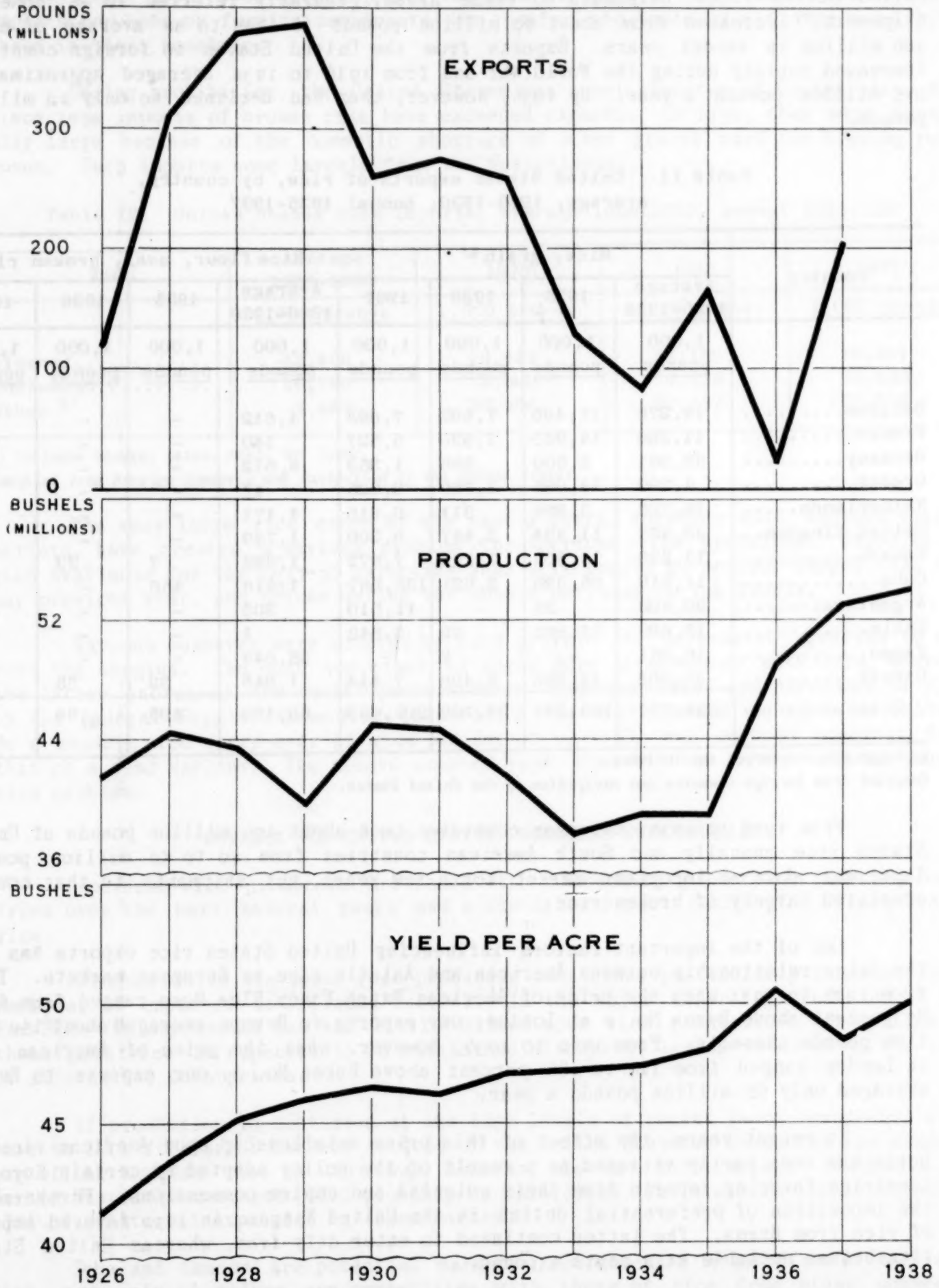
While yields per acre have increased steadily the acreage planted to rice has fluctuated considerably. These fluctuations were in large part due to price changes. Increases in acreage generally take place after about 3 years of high prices, and reductions usually follow 2 or 3 years of low prices. In 1918-1920, the acreage was large as a result of high prices received during the war. In 1933-1935, however, the acreage was the smallest it had been in 20 years as a result of the very low prices obtaining during that period. During the past 2 years, the acreage has again been at near record levels.

Rice differs from most other farm crops produced in the United States in that the grower has greater control of yields and the crop is less dependent on variations in weather, being grown almost exclusively under irrigation.

Total consumption of rice in the United States has been increasing gradually but apparently only about in proportion to the increase in population. Per-capita consumption appears to be associated with changes in industrial activity; but compared with that of many other countries it is low, averaging only 5 or 6 pounds per year.

The United States foreign trade in rice has been very irregular. For several decades prior to the Civil War, the United States was a net exporter. At that time, rice production was confined largely to the southern Atlantic States. During the Civil War, both production and trade declined to insignificant levels, and it was not until a number of years later that production again began to increase, largely as a result of its introduction into the lower Mississippi Valley. The introduction of improved harvesting machinery and methods of cultivation early in the present century brought about a material expansion in production, not only in Louisiana but also in Texas and Arkansas, and somewhat later in California. By 1910, the United States was once more producing sufficient rice for domestic food requirements; but it was a heavy consumer of broken rice for brewing purposes. It was not until 1916 that the country again became a net exporter of rice.

RICE: UNITED STATES EXPORTS, PRODUCTION, AND YIELD, 1926-38



U.S. DEPARTMENT OF AGRICULTURE NEG. 34380 BUREAU OF AGRICULTURAL ECONOMICS

Fig. 4.

Puerto Rico, Hawaii, and Alaska have always provided important outlets for United States rice. Shipments to these areas, generally referred to as "domestic shipments," increased from about 90 million pounds in 1905 to an average of about 300 million in recent years. Exports from the United States to foreign countries increased rapidly during the World War and from 1916 to 1934 averaged approximately 275 million pounds a year. By 1936, however, they had declined to only 22 million pounds.

Table 11. United States exports of rice, by country, average, 1926-1930, annual 1935-1937

Country	Rice, grain a/				Rice flour, meal, broken rice			
	Average 1926-1930	1935	1936	1937	Average 1926-1930	1935	1936	1937
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Belgium	14,275	11,485	1,592	7,893	4,612	-	-	-
France	11,366	14,945	1,690	5,527	140	-	-	226
Germany	33,981	5,500	585	1,353	8,512	-	-	-
Greece	4,290	13,085	1,750	9,625	47	-	-	-
Netherlands	16,762	3,956	311	6,916	4,171	-	-	-
United Kingdom	33,453	11,334	3,447	6,300	1,749	-	-	-
Canada	13,238	10,502	7,282	7,872	1,882	7	33	43
Cuba	11,510	65,396	2,621	135,587	1,418	456	-	170
Argentina	20,402	23	-	11,510	305	-	-	-
Chile	13,693	15,865	20	3,642	1	-	-	-
Japan	16,851	-	2	-	38,648	-	-	-
Others	36,956	12,256	2,428	7,414	1,945	32	55	10
Total	226,777	164,347	21,728	203,639	63,430	495	88	449

a/ Rough rice converted and included.

Compiled from *Foreign Commerce and Navigation of the United States.*

From 1926 to 1930, European countries took about 150 million pounds of United States rice annually and South American countries from 40 to 50 million pounds. Japan was also an important market for a few years, but shipments to that country consisted largely of broken rice.

One of the important factors influencing United States rice exports has been the price relationship between American and Asiatic rice in European markets. Thus, from 1927 to 1931 when the price of American Extra Fancy Blue Rose ranged from 60 to 85 percent above Burma No. 2 at London, our exports to Europe averaged about 150 million pounds annually. From 1932 to 1936, however, when the price of American rice in London ranged from 114 to 186 percent above Burma No. 2, our exports to Europe averaged only 60 million pounds a year.

In recent years, the effect of this price relationship upon American rice exports has been partly vitiated as a result of the policy adopted by certain European countries favoring imports from their colonial and empire possessions. Furthermore, the imposition of preferential duties in the United Kingdom in 1932 favored imports of rice from Burma. The latter continued to enter duty-free, whereas United States rice became dutiable at 2 cents a pound.

In spite of the fact that the United States has been a surplus rice-producing country since 1916, substantial quantities have always been imported. Most of these imports are used by foreign immigrants, who prefer the taste of the varieties produced in their homeland.

During prohibition, the United States was a net exporter of broken rice, but since 1934 imports of broken rice have exceeded exports. In 1937, they were unusually large because of the domestic shortage of other grains used for brewing purposes. Such imports come largely from the Netherlands.

Table 12. United States rice imports, average 1926-1930, annual 1935-1937

Kind	Average 1926-1930	1935	1936	1937
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Cleaned.....	42,402	19,481	13,155	18,247
Uncleaned.....	10,766	3,520	4,439	12,539
Other [a/]	4,489	30,456	97,487	156,572

a/ Includes broken, patna, meal, and flour.

Compiled from *Foreign Commerce and Navigation of the United States.*

The very large rice crops of the past 2 years, together with reduced export outlets, have created a serious problem for American rice producers. Supplies of rice available for the 1937-38 marketing year were nearly 25 percent larger than for any previous year, and prices during the season declined to low levels.

Various measures were adopted by both private and Government agencies to remove the surplus. The most important of these were an agreement with Cuba, whereby the latter increased the tariff preference on American rice, and purchases of rice by the Federal Surplus Commodity Corporation for distribution to those on relief. As a result, the carry-over of rice on August 1, 1938, was reduced somewhat from that of a year earlier. The record crop of 1938, however, has again created a surplus problem.

OUTLOOK FOR UNITED STATES PRODUCERS UNFAVORABLE

American rice producers are faced with increasing production in other countries over the next several years and a curtailed export outlet for United States rice.

Production in the newer rice-producing countries, particularly those of South America, is expected to increase further. In the major exporting countries of the Far East the depression has had little effect upon rice production. Production in these countries is expected to be maintained at current levels because of the lack of alternative enterprises.

If production is continued at the high levels of recent years, producers will have to look for larger markets outside of the United States. Prospects for disposing of the surplus rice in this way, however, are not encouraging. Shipments to United States possessions will probably be maintained, but there is little expectation of a material expansion in these markets.

Cuba and Canada are potential markets for increased quantities of American rice, but only if prices are competitive with those of rice from other sources.

Exports to other foreign countries are expected to be much smaller than in the late twenties and early thirties. This is due to increased production in South American and Oriental importing countries, which formerly took substantial quantities of rice from the United States, and particularly to the policies of several European importing countries of encouraging imports from their colonial and empire possessions.

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ECUADORAN GOVERNMENT TO CONTROL BANANA INDUSTRY

The first step toward the establishment of a greater degree of nationalization in the banana industry of Ecuador was taken by a decree dated July 8, 1938, prohibiting any individual banana company now established in the country from owning more than 80,000 hectares (198,000 acres) of land, according to a report received by the Bureau of Agricultural Economics from the American Embassy at Quito.

Companies now possessing more than that area are required to dispose of their surplus holdings to Ecuadorans in parcels of not more than 200 hectares (494 acres) each within 5 years from the date of the decree. All holdings exceeding the fixed limit not disposed of by July 1, 1943, will become the property of the State without compensation.

The decree also provides that, in order to export their own bananas legally, the companies will be obliged to purchase and export an equal quantity of bananas grown by Ecuadoran producers. In each export shipment, therefore, 50 percent of the total must be fruit grown by, and purchased from, native Ecuadoran landowners. If the banana production of the foreign-owned companies exceeds that which national producers are able to deliver, the surplus may be exported only on the payment of double export taxes on each excess stem.

The Ministry of Social Welfare is authorized by the decree to appoint a supervisor to control export shipments in conformity with the law. Any dispute in the purchase price between buyer and seller is to be decided by the supervisor. The decree required the obligatory revision, by August 8, 1938, of all contracts between banana companies and the Government, with the abrogation of all clauses and privileges contrary to the provisions of the new law.

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POLAND ADOPTS NEW CEREAL POLICY

A new long-range cereal policy designed not only to insure Polish agriculture a profitable return on cereals consumed domestically but also to prevent disturbing spreads between prices of agricultural and industrial products and to revivify Polish economic activity in general was adopted in Poland on August 5, 1938, according to a report received by the Bureau of Agricultural Economics from the American Embassy at Warsaw.

The Government has announced that the new policy contains three elements. First, the cereal production of Polish agriculture must be maintained and even increased in the next few years in order to provide for (a) higher standards of living;

(b) adequate reserves in years of bad crops and military needs; and (c) fair exports in support of Polish economy, since Poland is predominantly an agricultural state and agriculture should provide export commodities.

In the second place, cereal production in Poland can be maintained only on the basis of profitable returns to growers; and, since the State opposes restrictions on production as a means to increase prices, governmental price-supporting measures must be enforced. The third element of the new policy is that any program must be of long-range application rather than designed merely to meet current emergencies. It should, consequently, be flexible enough to work in years of good as well as low prices, since internal prices in Poland normally are determined by world prices.

With these objectives in mind, the new law sets up an "optimum price" for rye of 20 zlote per quintal (96 cents per bushel) with the prices of other cereals in appropriate ratio. Whether that "optimum price" is to be maintained through the payment of differentials to growers equal to the difference between the guaranteed level and the actual selling price has not been announced. The law does not specifically state how the price is to be maintained, leaving decision in the matter to the Minister of Agriculture.

It is provided that the funds for maintaining prices are to be obtained from a tax on rye, wheat, and barley flour sold for consumption in Poland, whether milled from domestic or imported grain. This tax cannot be higher than 3 zlote per quintal (26 cents per 100 pounds), and the actual amount will be fixed from time to time by the Ministry of Agriculture. It is to be levied, however, only when the average price of rye during 20 consecutive days on the Warsaw Exchange is less than 20 zlote per quintal. It will be suspended whenever the average price during 30 consecutive days on the Warsaw Exchange exceeds that level.

It is generally understood that the bread consumer in Poland will have to bear the cost of the processing tax. The expected effect of the law will be to freeze the price of rye, except in years of high world prices, at 20 zlote per quintal and the price of bread to the consumer at the appropriate ratio.

This new law, although enacted on August 5, did not become effective until early in September. It supplements the export bounties, Government purchases during periods of low prices, and the system of credits for withholding grain from market immediately after harvest described in detail in "Farm Aid in Poland," page 409, September issue.

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JAPAN TRADES FINISHED TEXTILES FOR AUSTRALIAN WOOL

Under the terns of a new Japanese-Australian trade agreement, Japan engages to purchase between 350,000 and 400,000 bales of Australian wool during the 12 months ending June 30, 1939, in return for definite textile quotas in the Australian market, according to a report received by the Bureau of Agricultural Economics from the American consulate general at Sydney. The agreement, dated July 1, 1938, is to remain in operation for only 1 year but may be extended at the end of that period.

In return for Japanese purchases of wool, Australia agrees to admit at special rates of duty 51,250,000 square yards of Japanese-made cotton piece goods (exclusive of calico used in the manufacture of bags) and 51,250,000 square yards of Japanese-made artificial silk or other "staple fiber" piece goods.

Japan not only obligates herself to purchase at least 350,000 bales of Australian wool but in addition agrees to issue permits enabling Australia to provide two-thirds of Japan's wool imports up to 500,000 bales, and three-fourths of the imports in excess of that amount. Japan has given assurances that the requisite foreign-exchange permits will be granted for such imports. Should the Japanese imports of Australian wool fall below the minimum figure, Australia has a right to revise the quotas applicable to imports of Japanese textiles.

Japan agrees to limit exports of piece goods to Australia to the stipulated amounts and to arrange for their "orderly marketing" in the interests of both the Japanese and the Australian textile firms. To accomplish this, shipments of Japanese piece goods of cotton, artificial silk, and staple fiber to Australia will be allowed only when accompanied by an export-control certificate issued by the Japanese Government.

The agreement replaces one in effect from May 1936 to June 30, 1938. Under the old agreement, Japan undertook to purchase 800,000 bales of Australian wool during the 18 months ending June 30, 1938, while Australia in return agreed to permit the importation of Japanese cotton and silk piece goods at the rate of 102,500,000 square yards a year.

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PORTUGAL ENCOURAGES COLONIAL COTTON PRODUCTION

The Government of Portugal has recently adopted two new measures to encourage increased production of cotton in the Portuguese colonies, according to a report received by the Bureau of Agricultural Economics from the American consulate general at Lisbon.

The first of these establishes a corporative organization, the Colonial Cotton Export Board, to supervise and regulate all cotton exports from the colonies. Under that law, no cotton can be exported from the colonies without a certificate issued by the Board. The objective is to bring about improved quality and better classification of colonial cotton.

The second decree establishes a minimum price for colonial cotton. This price for 1938-crop cotton has been fixed at 7.50 escudos per kilogram (15 cents per pound) for first-quality and at 6.80 escudos per kilogram (14 cents per pound) for second-quality lint.

The decree also provides that, should the landed costs of American cotton in Portugal be lower than the fixed prices for the colonial product at the time of sale in the Portuguese market, the difference is to be refunded to the purchaser of the colonial cotton by the Cotton Board. To provide funds for the payment of this subsidy, the decree establishes a tax of 0.50 escudos per kilogram on all foreign cotton imported into Portugal.

It is also provided that growers may sell their cotton direct to the Board rather than in the free market. If buyers refuse to purchase such cotton, the Board is authorized to arrange for its compulsory distribution among registered importers on a quota basis. The importers must purchase it at fixed prices.

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